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ABSTRACT

Designed for use by postsecondary educators involved in teaching displaced workers, this guidebook provides an in-depth look at successful upgrading and retraining programs in colleges in diverse situations across the country. The rationale for a human resource emphasis in economic development and the role of the two-year college in economic development are discussed. Provided next are case studies of upgrading and retraining programs at the following institutions: Tri-County Technical College in South Carolina, Macomb Community College in Michigan, State Technical Institute at Memphis in Tennessee, Triton College in Illinois, and South Oklahoma City Junior College in Oklahoma. Various barriers and solutions to developing successful retraining programs are examined, including state and local linkages for economic development, course approval systems, college forecasting and planning, marketing of customized training, customized training management, flexibility of resources, internal organization and cooperation, faculty and staffing, and other economic development outreach services. The last chapter presents these critical elements along with accompanying recommendations and provides conclusions reached concerning the upgrading and retraining of adult workers by colleges for industry. (MN)

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RETRAINING AND UPGRADING WORKERS:
A GUIDE FOR POSTSECONDARY EDUCATORS

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1960 Kenny Road
Columbus, Ohio 43210

1983

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TABLE OF CONTENTS

Page

LIST OF FIGURES v

FOREWORD vii

EXECUTIVE SUMMARY ix

CHAPTER 1. INTRODUCTION 1

Overview of the Project and the Guidebook 1
Using the Guidebook 9

CHAPTER 2. ECONOMIC DEVELOPMENT AND HUMAN RESOURCES 11

Rationale for Human Resource Emphasis in Economic Development 11
The Role of the Two-Year College in Economic Development 15

CHAPTER 3. CASE STUDIES 23

Introduction to Case Studies 23
Tri-County Technical College (South Carolina) 29
Macomb Community College (Michigan) 67
State Technical Institute at Memphis (Tennessee) 89
Triton College (Illinois) 123
South Oklahoma City Junior College (Oklahoma) 155

CHAPTER 4. BARRIERS AND SOLUTIONS 173

State and Local Linkages for Economic Development 173
Course Approval Systems 176
College Forecasting and Planning 177
Marketing of Customized Training 179
Quick Response Customized Training 183
Customized Training Management 184
Flexibility of Resources 186
Internal Organization and Cooperation 190
Faculty and Staffing 192
Other Economic Development Outreach Services 194

CHAPTER 5. CRITICAL ELEMENTS AND RECOMMENDATIONS 197

Conclusions 205

REFERENCES 207

LIST OF FIGURES

Page

Figure 1. Literature Search Scheme: Issue Tree 4

Figure 2. Organizations and Actors in Customized Training Programs 7

Figure 3. Significant Dimensions of the Two-Year College Case Studies 26

Figure 4. Significant Economic Development Activities of the Two-Year College Case Studies 27

Figure 5. South Carolina Technical Education System (TEC) Administrative Structure for Tri-County Technical College 35

Figure 6. Tri-County Organizational Structure under the Dean of Instruction 37

Figure 7. Tri-County Organizational Structure under the Dean of Continuing Education 38

Figure 8. Sources of Revenue Composite FY 76-FY 80 (Tri-County) 42

Figure 9. Organizational Structure of Macomb Community College 70

Figure 10. Funding for Macomb Community College 71

Figure 11. Michigan Status Study-Recommendations for Educational Institutions' Planning 85

Figure 12. Michigan Status Study's Recommendations 86

Figure 13. Organizational Chart of the State Technical Institute at Memphis (STIM) 92

Figure 14. Evening and Special Programs at State Technical Institute at Memphis 92

Figure 15. Instructional Affairs at State Technical Institute at Memphis 93

Figure 16. Administrative Affairs at State Technical Institute at Memphis 93

Figure 17. Data for STIM's B.I.G. Division 100

Figure 18. Pricing Policy Memorandum for STIM's B.I.G. Division and Industrial Outreach Area 114

LIST OF FIGURES (continued)

Page

Figure 19. State Structure for Administration of Triton College 126

Figure 20. Top Levels, Triton College Administration 127

Figure 21. Administrative Levels under the Vice-President of Academic Affairs, Triton College 129

Figure 22. Funding Sources for Triton College 132

Figure 23. Organizational Chart for South Oklahoma City Junior College (SOCJC) 157

Figure 24. Organization of Goal-setting Process for SOCJC 160

Figure 25. SOCJC's Business and Industry Coordinator Job Description 162

Figure 26. Objectives of SOCJC's Business and Industry Coordinator for FY 1983 164

Figure 27. Job Description for SOCJC's Dean of Career Development and Industrial Relations 164

FOREWORD

The upgrading and retraining of adult workers is critically important in addressing America's problem of productivity and its need for economic development. With continual changes in technology and the great number of displaced workers, upgrading and retraining services are acutely needed. Community and technical colleges are community-based institutions capable of providing the vocational and technical education required. They have an impressive record of responding to community needs, both those of industry as well as of individuals.

This guidebook will give postsecondary educators an in-depth look at successful upgrading and retraining programs in colleges in diverse situations across the country. Many lessons from these example colleges and from the industries they serve can be applied in related settings. College administrators, industry human resource development personnel, and leaders in public and private agencies interested in economic development can use the book both as a guide and as a resource for ideas.

The contributions of the project's Technical Advisory Panel members in advising project staff at the beginning of the project and in reviewing this book are greatly appreciated. These persons are Kay Fett, Economic Development and Training Coordinator at Lakeshore Technical Institute in Cleveland, Wisconsin; Don C. Garrison, President of Tri-County Technical College in Pendleton, South Carolina; James O'Hara, Operations Personnel Manager of Matsushita Industrial Company (Quasar Electronics) in Franklin Park, Illinois; Joe E. Sturdivant, Director of the Industry Services Division of the North Carolina State Department of Community Colleges, Raleigh, North Carolina; and James E. Wall, Associate Dean (R & D) of the College of Education and Director of the Bureau of Educational Research and Evaluation at Mississippi State University, Mississippi State, Mississippi. A final review of the book was conducted by Wayne Sampson, Director of Public Affairs and Institutional Research at Illinois Central College in East Peoria.

Appreciation is also expressed to Catharine P. Warmbrod, Project Director of the Upgrading and Retraining of Adult Workers Project and to Constance Faddis, Program Assistant, for their work in conducting the project and in writing this guidebook. Catharine Warmbrod directs projects at the National Center that relate to the involvement of business, industry, and labor in vocational and technical education at the postsecondary level. Among her publications are *Sharing Resources: Postsecondary Education and Industry Cooperation*; *Business, Industry and Labor Inputs in Vocational Education Personnel Development*; *Postsecondary Program Evaluation*; and *Preparation for High Technology: A Guide for Community Colleges*. Prior to joining Ohio State University, Mrs. Warmbrod chaired a business department at a two-year technical college in Ohio. Her professional experience also includes serving as Head Supervisor of Student Teachers in Business at the University of Illinois. Constance Faddis has worked with National Center research projects in the areas of high technology and of occupational adaptability and transferable skills. She is author of a number of related research publications, most notably *The Worker as Proteus: Understanding Occupational Adaptability*, and *Preparing for High Technology: Strategies for Change*.

The contribution of Robert D. Bhaerman in helping prepare one of the case studies is gratefully acknowledged. Jan Hinig and Beverly Haynes provided word processing assistance, and Janet Kiplinger, Sharon Fain, and Michael Wonacott provided editorial services.

Robert E. Taylor
Executive Director
The National Center for Research
in Vocational Education

EXECUTIVE SUMMARY

Community and technical colleges play a very important role in economic development through their upgrading and retraining of adult workers for business and industry. To produce a guide to aid colleges that wish to expand or improve their services for business and industry, information was gathered through site visits to colleges in diverse settings that were involved in exemplary economic development activities. Those colleges were selected to meet specific project criteria and were based upon recommendations of the project's Technical Advisory Panel and other leaders in the field.

The colleges studied were Tri-County Technical College in Pendleton, South Carolina; Macomb Community College in Warren, Michigan; State Technical Institute at Memphis in Tennessee; Triton College in River Grove, Illinois; and South Oklahoma City Junior College in Oklahoma. A qualitative research approach was used to gather information at the selected colleges, the companies they served, and related state and local organizations and agencies. Key persons both within and external to the college at each site were interviewed and pertinent data and materials were secured.

Case studies were prepared of each of these colleges, focusing on their upgrading and retraining services for industry and other economic development activities. The word *industry* as used in this report refers to business, industry, labor, government, agricultural, and medical organizations and agencies. Each case study describes the economic environment in which the college exists, the state structure for two-year colleges and vocational education, and the state structure for economic development. Each college is presented in terms of its mission, its organizational structure, funding, and distinctive features. Emphasis is placed upon the college's structure for upgrading and retraining, with full descriptions of the roles, responsibilities, and relationships of all involved parties. This includes industry services (customized training), continuing education programs, and regular technical education programs for occupational advancement. The college's working relationships with state and local economic development and educational agencies are described.

In-depth reports on customized training for the major companies with whom each college works are also presented. These customized training programs are described from the viewpoints of both the industry persons involved and the college providers. The reports provide a view of the process, the particular training undertaken, and the results achieved.

To guide other colleges in the process used in the delivery of upgrading and retraining, each case study fully describes the linkage process and the system for program design and delivery. The descriptions cover such aspects as methods of communication between the college and industry; needs assessments for upgrading and retraining; training agreements for customized work; course development; funding and budget; selection of instructors; scheduling; and the use of facilities, equipment, materials, and evaluation of courses or programs.

Each case study concludes with a summary of the key factors in the college's overall success at providing upgrading and retraining for adult workers.

The information across the case studies was synthesized to identify the barriers the colleges encountered in providing upgrading and retraining services and the solutions they implemented or proposed. An analysis was also done to identify the critical elements for success.

The last chapter of the guidebook presents these critical elements with accompanying recommendations and provides conclusions reached concerning the upgrading and retraining of adult workers by colleges for industry.

These critical elements may be viewed as recommendations for other colleges wishing to improve or expand their upgrading and retraining services. It was found that strong leadership of the college president is essential in mobilizing the college to serve industry and to aid in local and state economic development. Commitment throughout the college—administrators, faculty, and staff—is required to get results. This commitment must be visible to persons both within and outside of the college. One way to help ensure such commitment is for the college's mission statement or the goals of its president to specify the college's role in serving the training needs of industry. Another is to create a special office or division assigned to facilitate this function.

Good communication between the college and industry is likewise essential to developing effective working relationships. Companies need to see how they will benefit from using the college's training services, and colleges depend on feedback from industry to focus training programs and other economic development activities. Industry services coordinators should work closely with course instructors and with company executives or training directors in planning and conducting customized courses.

Institutional flexibility is a key in responding to industry's upgrading and retraining needs. Flexibility is necessary in scheduling courses, assigning instructors, finding and sharing facilities and equipment, funding the programs, and providing support services. The equipment used in such courses must be up to date to maximize the transfer of learning and the development of needed competencies, especially in high-technology areas.

The quality of instruction is a crucial factor in the success of all upgrading and retraining programs, and the selection of instructors with the needed technical and instructional skills and knowledge can make or break a course. Faculty development systems are needed to help keep faculty members up to date in their fields as well as skillful in teaching adults. More opportunities ought to be provided for instructors to "return to industry" to upgrade their own technical skills and knowledge. An institutional incentive system helps ensure the involvement and cooperation of faculty and staff in serving industry's training needs.

It is a considerable advantage for a two-year college to be an integral part of a state system for economic development. When funds and equipment for upgrading and retraining are made available by the state, this facilitates quick response by the college. Two-year colleges contribute to economic development most effectively when there is a coordinated state effort to create and maintain a highly skilled labor force.

CHAPTER 1
INTRODUCTION

Vocational and technical training in community, junior, and technical colleges has the potential of being one of America's strongest links in developing and revitalizing our economy in the 1980s and beyond. Many two-year colleges already have forged such links by establishing programs to strengthen both the skills of workers and the productive capacities of business and industry in their regions. Many of these programs—especially the more recent and innovative ones, such as customized training—have not been accessible for review by other colleges or college systems interested in establishing similar programs. The purpose of this guidebook is to provide such information—including the identification of common barriers and innovative solutions—to assist two-year colleges in becoming more effective agents for economic development in their communities through training, upgrading, and retraining of adult workers.

OVERVIEW OF THE PROJECT AND THE GUIDEBOOK

The Focus

The objectives of the project, Upgrading and Retraining of Adult Workers, are to—

- develop information for use by community and technical college administrators for their active participation in upgrading and retraining of workers for economic development;
- identify the obstacles and barriers, and then identify strategies and practices that have been or can be used to overcome such barriers and obstacles;
- produce a guide for postsecondary institutions and other involved organizations in the use of education and training to support economic development; and
- disseminate the results of the study.

In studying these broad objectives, project staff considered the following elements in order to guide the research into the most productive and beneficial channels:

- Priority—What are the most important areas on which to focus?
- Utility—What would be the most useful, needed kinds of information and materials?
- Practicality—What can this project accomplish within its resources and limitations?
- Scope—What levels of information should be gathered (federal, state, local, institutional, and so forth)?

The decision was made to focus on upgrading and retraining efforts at the institutional level that have great promise for aiding economic development at the local and state levels. This focus enabled the project to build on earlier studies by the National Center for Research in Vocational Education, such as the Postsecondary Vocational Education Project, National Priorities for Vocational Education, and the Technology Adaptation Project, as well as to make good use of the National Center's contacts with two-year colleges through its involvement with the National Postsecondary Alliance.

The content of the guidebook was allowed to develop naturally through the information collection activities, with certain critical guidelines. One vital consideration was the close collaborations between colleges and business and industry that appear to be intrinsic to successful upgrading and retraining programs. Linkages with other organizations or agencies were also a major concern, especially as they affect the sharing of resources. The philosophies and strategies of the colleges themselves were a central focus. These factors and others shaped the overall approach of the project. The intent was to produce a *practical* guide that, while it could not be used to prescribe specific methods or remedies for any particular college (each situation being unique), would provide substantial background information on what other colleges are doing in upgrading and retraining for economic development, as well as give specifics on the kinds of problems two-year colleges have encountered, what solutions they have developed, and what common essential factors they have that spell success for such training efforts.

The Methodology

The procedures for conducting the project were as follows:

1. A review of related literature was conducted.
2. A technical advisory panel was convened to assist the project.
3. Five community and technical colleges with successful upgrading and retraining programs and economic development activities were identified and selected for site visits.
4. A qualitative research methodology was devised to enable in-depth and appropriate collection of information at the sites.
5. Information was collected at the five sites and their related industries and agencies.
6. All pertinent information was analyzed and organized for incorporation into the guidebook.
7. The draft of the guidebook was reviewed by experts from outside the National Center, as well as by internal reviewers, and was revised accordingly.

In addition to the Technical Advisory Panel, these activities were augmented by informal contacts with knowledgeable persons both inside and external to the National Center, who shared information and made suggestions regarding the focus of the project and the guidebook, the candidate sites, methods of collecting and analyzing information, and content of the guidebook.

The Literature Review

The literature review was begun as soon as the project became active. One of the major purposes was to help project staff select the most appropriate focus for their efforts. To that end, the scope of the literature review was very broad, encompassing such concerns as (1) what the relationship is between economic development and postsecondary occupational training; (2) who is involved—and in what ways—in linking economic development with postsecondary occupational training; (3) what forms such training efforts take; (4) which colleges are delivering such training—as well as how, why, where, when, and to whom; and (5) what the colleges' major barriers, most successful solutions, and common factors are in delivering such training.

Figure 1 illustrates an "issue tree" used to guide and analyze the results of the literature search. Pertinent findings have been incorporated into the guidebook and appear in chapter 2, "Economic Development and Human Resources," as well as in the "Critical Elements and Recommendations" and the "Barriers and Solutions" chapters.

Technical Advisory Panel

The Technical Advisory Panel was convened for a two-day meeting early in the project to assist in refining the focus of the project, identifying critical information to be gathered during site visits, selecting techniques for gathering the information, nominating sites to be visited, identifying other related projects and materials, advising on the organization and thrust of the guidebook, and adding to the project's knowledge about customized training and related factors. The five panel members were selected to represent the following roles, responsibilities, and institutions:

- One or more practitioners in a community or technical college who develop training programs for specific industry needs. Such a person might be an industry coordinator, economic service coordinator, or director of continuing education.

- One or more higher level administrators in community or technical colleges who are involved in planning and economic development activities. Such a person might be a college president, vice-president, or dean of instruction.

- One or more human resource development persons in industry; such a person might be a training director who works with colleges to meet the company's training needs.

- One or more state-level persons with responsibility for attracting new business and industry to the state, and for serving such companies' training needs.

- These persons should represent different types of institutions and geographic locations.

Five Advisory Panel members were selected from an initial pool of about twenty candidates. These candidates were persons prominent in the literature, or who had been recommended by knowledgeable persons from the Postsecondary Alliance, from the National Center, or from other pertinent organizations that had contact with the project staff. The five persons who served on the Panel were—

- Ms. Kay Fett
  Economic Development and Training Coordinator
  Lakeshore Technical Institute
  Cleveland, Wisconsin

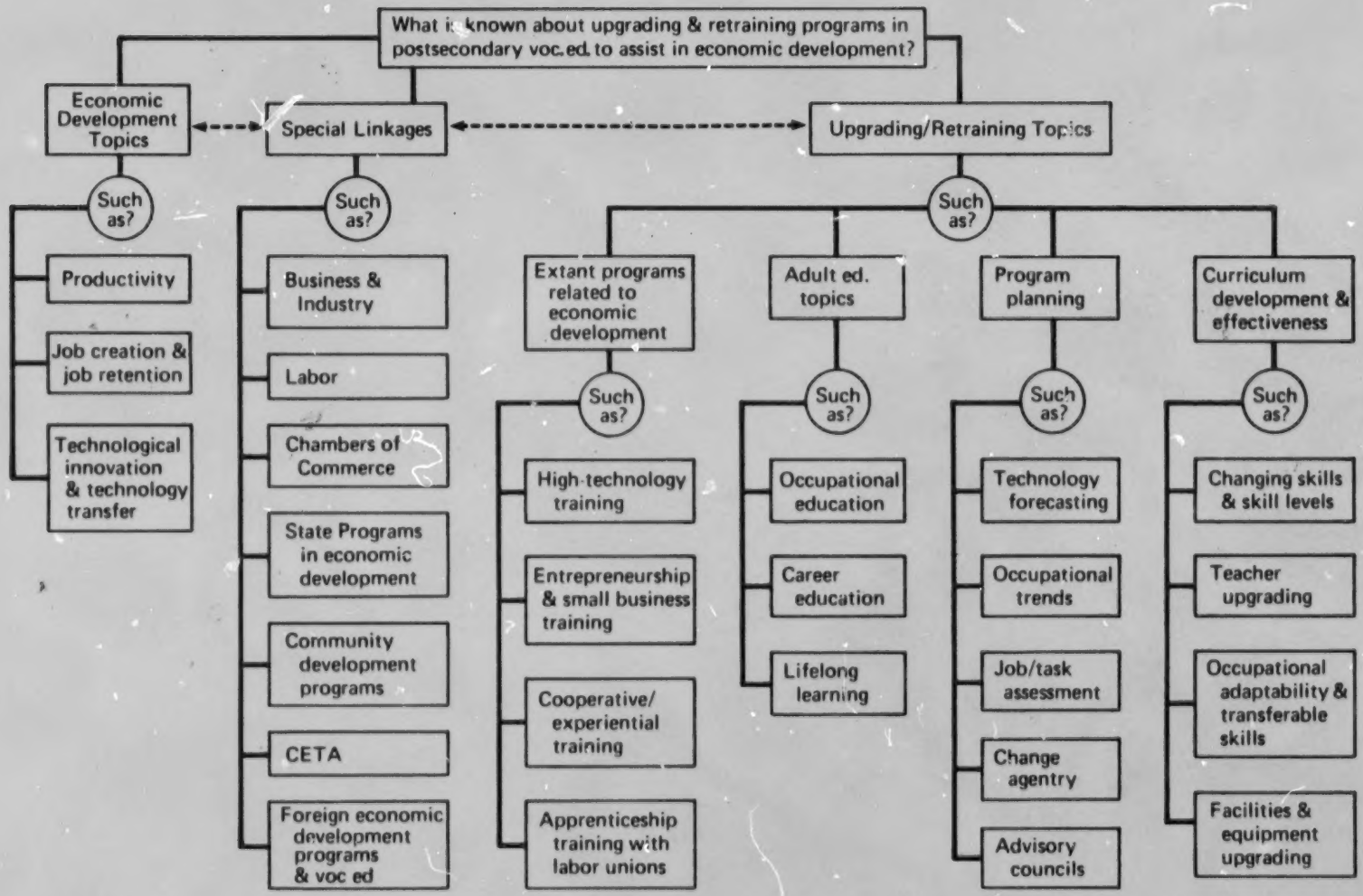


Figure 1. Literature Search Scheme: Issue Tree

- Dr. Don G. Garrison
  President
  Tri-County Technical College
  Pendleton, South Carolina

- Mr. James O'Hara
  Operations Personnel Manager
  Matsushita Industrial Company (Quasar Electronics)
  Franklin Park, Illinois

- Mr. Joe E. Sturdivant
  Director
  Industry Services Division
  State Department of Community Colleges
  Raleigh, North Carolina

- Dr. James E. Wall
  Director, Bureau of Educational Research and Evaluation
  Associate Dean, Research and Development
  Mississippi State University
  Mississippi State, Mississippi

Site Selection

Candidate colleges for site visits were drawn from findings in the literature review, recommendations of Advisory Panel members, and recommendations of other National Center staff or outside persons knowledgeable in the areas of upgrading and retraining and economic development. Final selection was based on the following criteria, by which selected colleges should—

- have extensive experience in serving the needs of business and industry in upgrading and retraining adult workers;

- have established a system for providing upgrading and retraining services to companies;

- utilize various delivery systems and modes of instruction for the training activities;

- include different types of two-year postsecondary institutions, such as community colleges, technical colleges, and junior colleges;

- represent different types of programs in terms of occupational focus, length, and purpose;

- represent different sources of initiation, such as a college, a state economic development agency, an industry, a state department of vocational education, a chamber of commerce, or any combination of these;

- represent different types of funding;

- represent different states and economic constituencies (e.g., Sun Belt versus Snow Belt, state versus local; rural versus small city or metropolis).

Five sites were selected for visits and in-depth information collection. They were—

- Tri-County Technical College, Pendleton, South Carolina
- Macomb Community College, Warren, Michigan
- State Technical Institute at Memphis, Memphis, Tennessee
- Triton College, River Grove, Illinois
- South Oklahoma City Junior College, Oklahoma City, Oklahoma

Whereas all of these sites meet the general criteria, so did a number of other candidate sites. The purpose of the project, however, was not to uncover merely representative upgrading and retraining programs, but to collect insights into the more diverse and truly innovative efforts. Those of the selected sites were judged to be exemplary in some potent aspects, and were known to be accessible and open to external inquiry.

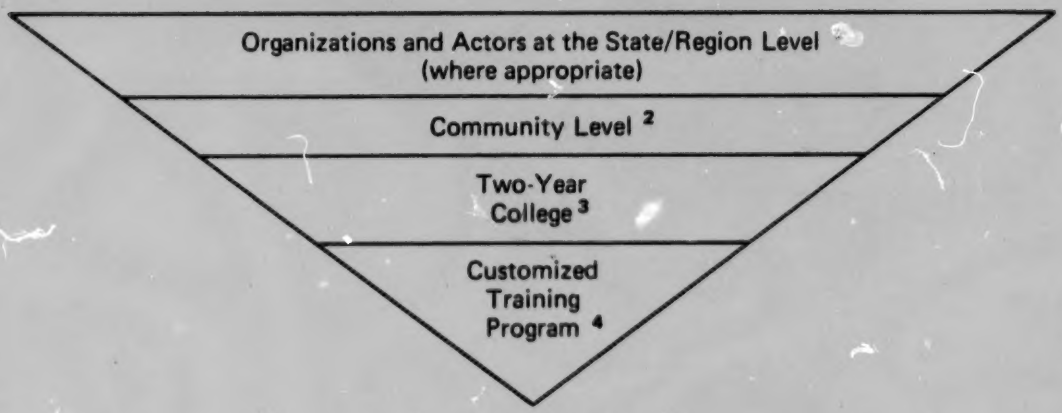
Information Collection Methodology

By the time the data collection procedure was to be designed, project staff had narrowed the focus to upgrading and retraining programs in publicly supported two-year colleges. The first task in devising an approach for collecting the information on which the guidebook was to be based was to identify all important kinds of actors likely to be involved in planning, funding, designing, marketing, and implementing such programs. Figure 2 illustrates the "environmental" approach taken in identifying the types of organizations and essential roles. Whereas organizations and titles varied from site to site, the essential functions and roles were identified through the literature search and the expertise of the Advisory Panel members.

Having specified the "where" and "who," it remained to devise a system for collecting vital information about the "what," the "why," and especially the "how" of the exemplary upgrading and retraining programs at the sites. An outline of pertinent factors and concerns was used to prepare lists of potential questions to be asked of the persons in the specified roles at the time of the interviews. These possible questions—which addressed the roles, responsibilities, restrictions, philosophies, interactions, processes, barriers, and solutions the particular actors encountered in their involvement with upgrading and retraining programs—would function as stimuli and guides in conversation, so that the same topics were broached with interviewees in similar roles at the different sites. Although the topics to be dealt with were carefully thought out and covered, the interviews themselves were unstructured, allowing a free flow of information from the interviewee. This enabled the distinctive and unique qualities in each situation to be revealed.

Site Visits

The five site visits were conducted over a period of two months. Each visit took three days to complete. Following qualitative research methodology, the project director conducted in-depth, unstructured interviews with representatives of each of the designated roles in the selected colleges, the involved companies, and in state or local organizations or agencies. Additional information in the form of existing documents and records was collected.


Organizations and Actors at the State/Region Level (where appropriate)
Community Level 2
Two-Year College 3
Customized Training Program 4

[1]– Related roles:

- Director or representative of state economic development agency
- Commissioner or representative of state postsecondary vocational education agency

[2]– Related roles:

- Chief executive or director of training or personnel at a business or industry receiving customized training services
- President or representative of local chamber of commerce
- Director or representative of local or county economic development board

[3]– Related roles:

- President of college
- Dean of continuing education (or counterpart)
- Dean of occupational education (or counterpart)

[4]– Related roles:

- Vice-president or dean of instruction (or counterpart in charge of customized training services)
- Industry services coordinator (or counterpart)
- Customized training instructor
- Company liaison (may be director of training or personnel)
- Employee-students or graduates of customized courses

Figure 2. Organizations and Actors in Customized Training Programs

During each interview at the sites, the project interviewer took notes of salient facts and statements and recorded the interview on tape. The interviewer also recorded personal observations and impressions. Other crucial information was gleaned from documents collected at the colleges and at the related state and community agencies (i.e., of eduation and economic development). These documents included the following:

- State or local economic development legislation, plans, policies, strategies, or incentives for companies and schools to cooperate in upgrading and retraining of adult workers
- Local business and industry profiles
- College mission statements or any documentation regarding the colleges' philosophies and priorities relating to economic development and upgrading and retraining
- College annual reports
- College organization charts, especially pertaining to industry services
- Public relations documents relating to customized and other college training services
- College (or state agency) assessments of customized and other training efforts
- Job descriptions of key personnel
- Procedure manuals relating to programs for upgrading and retraining

To triangulate the data satisfactorily, perceptions were secured from the providers of educational services (college representatives), the receivers of the services (industry representatives), and related community and state agencies. This balanced and confirmed perceptions and provided a more complete view.

Analysis of Data

The materials collected from each site visit (transcripts of interviews, notes, documents, and records) were studied by project staff and organized according to the proposed outline for the case study reports. During this review, information that revealed barriers, solutions to barriers, and critical elements for success was noted and highlighted. The information selected and presented in the case study reports is geared to serve the needs of the practitioner—persons in various pertinent roles at colleges, in industry, and in educational and economic development agencies.

Information across all case studies was analyzed to reveal the following:

- Common elements of successful upgrading and retraining programs, especially those elements considered by interviewees to be most critical to success
- Barriers or problems encountered during the planning, funding, development, marketing, implementation, or evaluation of those programs
- Strategies or solutions applied to the barriers to resolve problems and facilitate the programs

- Specific procedures and recommendations useful to other two-year colleges interested in initiating or expanding upgrading or retraining programs for adult workers

The credibility of the study was established by rechecking the data with the subjects (college and industry representatives) providing the information, as well as through triangulation. The transferability of the study was ensured by selecting a purposive sample of two-year colleges in diverse settings. Enough information was provided to judge the similarity of a second context (i.e., another college) to that found in one of the examples presented. The dependability of the data was ensured by maintaining good records of interview schedules and events during site visits, and by establishing orderly files of documents and records gathered. This provides an audit trail to lead back to the data source.

Preparation of the Guidebook

The chapters of the guidebook were drafted according to Advisory Panel recommendations. Individual case study reports were shared with the related colleges to obtain any necessary additions or corrections. The draft of the guidebook was likewise reviewed by the members of the Advisory Panel. Formal review was conducted via the National Center's Product Review Evaluation system, whereby two experts external to the National Center and one National Center staff persons (other than project staff members) evaluated the guidebook according to criteria of scholarship, usefulness, equity, communicability, marketability, and overall quality. The reviewers' recommendations were then used to revise and refine the guidebook.

USING THE GUIDEBOOK

Organization of the Guidebook

The guidebook contains five chapters. This "Introduction" (Chapter 1) has given an overview of the need for and purpose of the guidebook, its focus on upgrading and retraining for adult workers, and the methodology employed in its preparation.

Chapter 2, "Economic Development and Human Resources," briefly reviews the concepts, definitions, rationales, and trends that underlie or affect the economic development involvement of two-year colleges. The two major issues are (1) economic development and the utilization of human resources, and (2) the role of the two-year colleges in economic development.

Chapter 3, "Case Studies," contains full, rich reports on the economic development philosophies, policies, and practices of the five selected colleges and their upgrading and retraining programs. Information is also included on the outside agencies, organizations, companies, and key individuals involved with the colleges in planning, funding, developing, marketing, implementing, or using those programs. The Case Studies chapter opens with an introduction describing the diverse environments, economic climates, organizational structures, and kinds of industry services encompassing publicly funded two-year colleges. A brief description of the contribution of each selected college is provided. Two matrices of information across all five case studies allow easy identification and location of specific aspects of interest to the reader, as does an outline of the case studies.

Chapter 4, "Barriers and Solutions," synopsizes the kinds of problems or barriers encountered by the colleges in the case studies, and reports on their many inventive solutions to,

or ways of getting around those barriers. Also included is relevant information gleaned from the Advisory Panel and from the literature review. This chapter provides insights for persons or groups involved (or becoming involved) in upgrading and retraining for adult workers, and—it is hoped—should give a realistic idea of what kinds of problems such training programs do encounter, as well as what myriad ways that ingenuity, perseverance, team effort, and the creative use of available resources enable colleges to cope with all kinds of roadblocks.

The final chapter, "Critical Elements and Recommendations," synopsizes common elements across the five case studies that are crucial for successful upgrading and retraining programs. Because of their critical roles, these elements also occasion related recommendations for those who are planning or wish to improve two-year colleges' policies and practices related to economic development outreach.

Definitions

To clarify meanings and facilitate understanding, the following definitions of key words are provided:

1. **Industry**—A generic term referring to business, industry, labor, government, agricultural, and medical organizations and agencies.

2. **Economic development**—An investment of capital that results in new jobs and increased tax revenues. These new jobs may be created through expansion of present industry, new companies moving into an area, or entrepreneurship. It can also refer to an investment of capital to install new technology so a company can be competitive, increase productivity, and stay in business.

3. **Retraining**—Refers to training for a new occupation that is not part of the career ladder of the prior job. This often results in a horizontal job move, rather than a vertical one.

4. **Upgrading**—Refers to building on present job skills to achieve a higher level of skills needed to keep up with new technology or to qualify for an advanced position in one's present place of employment or in a different job setting.

5. **Start-up training**—Also called "quick-start" training in some states, this is training for new or potential workers for a plant or business that is just opening or expanding. A number of states provide this training free of charge.

6. **Technology transfer**—Refers to promoting the adoption or adaptation of new technologies through information sharing, technical assistance, training, and the promotion of linkages between R&D and technology users.

7. **Industry services**—Refers to two-year colleges' economic development outreach to local and prospective business and industry through a variety of services, primarily consisting of customized training, but also including provision of training needs assessments, demonstrations of high-technology equipment and processes, provision of useful local and state data (such as annual surveys of standard wages and practices), and so forth.

CHAPTER 2

ECONOMIC DEVELOPMENT AND HUMAN RESOURCES

The concept of economic development is not new, nor is the involvement of community colleges in economic development. What is new is the importance these activities take on in a decade of economic recession, declining productivity, imminent and massive changes in technology, vigorous foreign market competition, and devastating unemployment rates—with the prospect that many companies may go bankrupt and many of the unemployed will not return to the type of jobs they left. Training can be an essential part of the solution to the problems that American companies and adult workers are facing.

Two major issues are crucial to the upgrading and retraining of adult workers in this country: (1) how human resources relate to economic development, and (2) how two-year colleges perform the training functions related to economic development. A basic understanding of economic development concepts, policies, and practices is vital for training agencies in making intelligent, informed decisions about how best to approach and serve this country's training needs.

It should be noted that no attempt is made here to argue for or against any of the issues; that has been done extensively in many other documents and forums (some of which are cited.) This chapter offers an overview of what appear to be the consensus concepts and assumptions from which emanate the current trends in economic revitalization, productivity improvement, and human resource development.

RATIONALE FOR HUMAN RESOURCE EMPHASIS IN ECONOMIC DEVELOPMENT

America's Productivity Problems

A major dilemma that emerged in the late 1970s and has carried into the 1980s is the fact that America's productivity, as expressed in the gross national product, has declined (Bolino 1981). America's productivity has slumped in part because both the quantity and quality of its output in many businesses and industries have either slipped or failed to keep pace with foreign competition. America must be able to compete in a global marketplace. Other suspected causes, listed by Huddleston (1982), include the following:

- The slowdown of growth in high-productivity industries
- The weakness of capital formation for the period between 1973 and 1978
- Curtailment of expenditures on research and development

- Reduction of patent applications, thus depressing the opportunity for major technological advances
- Governmental regulations
- Governmental paperwork required of businesses
- Loss of the work ethic in the work force
- Errors in measurement data
- Changes in the quality of management
- Rises in energy costs
- Lack of business investment in technology and people
- Relatively low rates—and related problems—of low productivity service industries
- Increased numbers of less experienced young workers, minority members, and women joining the work force
- Cyclical fluctuations in the economy
- Escalation of inflation
- Lack of government-backed incentives (p. 10)

Regardless of which factors or combinations of factors are the culprits, the productivity slump and its related problems of high interest rates, high unemployment rates, and other pressures on the national economy have combined to compel industry, as well as public institutions, to develop strategies to try to counteract the situation.

How Industry Is Responding

As American industry feels the pinch of lagging productivity, it is responding in a variety of ways. One disastrous response has been the shutdown of plants and entire companies (or their near-bankruptcy, as in the case of the Chrysler Corporation), as well as the demise of many small businesses dependent on the liquidated companies. Many companies have avoided shutdowns only by laying off large numbers of their work forces. In North Carolina alone, the textile industry eliminated sixty thousand jobs during the last decade. Some American companies have responded by going multinational, investing in plants in foreign countries where labor and other resources are cheaper.

Two of the more positive responses have been (1) investment in new technology, plants, and equipment; and (2) investment in human resources.

Investing in New Technology, Plants, and Equipment

Reindustrialization has recently been spotlighted as a way for American industry to turn around the productivity decline. Substantial investing in new technology, new plants, and new

equipment is crucial to reindustrialization. We already are seeing a growth of new technologies and technological applications that are increasing productivity, including the wide adoption of word processors, mini- and microcomputers, electronic information networks, satellite communications, and other applications of technological breakthroughs.

A notable example of the advantageous adoption of emerging technologies is the increasing use of robots for manufacturing in this country as well as in Japan, Germany, and other high-technology nations. Makers of advanced manufacturing equipment (e.g., Cincinnati Milacron, TRW, Rockwell International) have devised machines and tools that improve manufacturing accuracy, efficiency, costs, and safety for such users as the automobile industry, the aerospace industry, the construction industry, steel and other materials producers, and mining companies (Faddis, Ashley, and Abram 1982). Called by some "the new steel collar workers," robots will, according to Richard Beecher, head of the Machine Perfection and Robotics Department at General Motors, "be the salvation of the U.S. auto industry" (Dodd 1981, p. 691), because they will enable American auto manufacturers to produce more, better, and less expensive products that will be able to compete successfully with foreign auto manufacturers' cars.

The wide adoption of emerging technologies has many potential problems, however. The effect of wide adoption on employment is uncertain. As Carnevale (1982) has noted:

> The pessimists point out that technology, especially microelectronics, is about to come through on the automation threats of 20 years ago. . . . The optimists point out that historical experience and their own projects suggest that when all is said and done, the application of new technologies creates new productivity, products, and wealth, which in turn create demand for new products and services, thereby creating more, not fewer jobs. (p. 47)

The adoption of new technologies also affects occupations (i.e., new occupations emerge, old occupations vanish, occupational clusters change due to increasing specialization) as well as job content and skill requirements. The wide use of microprocessor-based technologies is transforming not only production-line jobs, but also many clerical and professional positions in the white-collar world.

New technologies require new skills, and new skills require new and continuing training and retraining. And while labor demand for some occupations and skills seems likely to decline, the increased complexity of much automated equipment is expected to increase the need for certain occupations and skills (e.g., maintenance technicians) at a faster rate than the rest of the work force (Barker 1979). Shortages of skilled workers may be exacerbated by the fact that a large portion of American industry's skilled work force is fifty years of age or older, and many companies may lose up to half of their work force in this decade through retirements (ibid.).

There seems little doubt, however, that new technologies will be adopted, whatever the effect on labor. To ignore the potential of new technologies for increasing productivity and product quality may be to dig a grave for American industry. Reindustrialization is expected to have critical implications for the long-range health of the American economy and the nation's strength as a world power.

Investing in Human Resources

Better technology is only a part of the proposed solution to our country's lagging productivity. Human capital investment accounts for a larger share of productivity growth than

does machine capital (Carnevale 1982). The economic success of such countries as Japan, Germany, and France is said to be in large part due to viewing human resources "as a form of capital in which it makes sense to invest—and reinvest—in order to lower unemployment, increase productivity, and lower inflation" (Striner 1982). In fact, training and retraining of human resources are now considered the prime management tool in those countries. And, based on the experiences of American companies such as General Motors, Delta Airlines, Hewlett Packard, IBM, Wells Fargo, Kodak, and 3M, commitment to policies of human capital investment do pay off in the United States (Huddleston 1982). Building and maintaining an up-to-date, skilled labor force are considered essential for a technology-oriented economy.

The two main approaches of investment in human resources that many American companies are taking involve (1) the use of new management practices, and (2) upgrading and retraining of employees. New management practices have largely been adapted from foreign companies' practices (e.g., quality circles, adapted from Japanese companies) or have evolved from organizational development (OD) theory. A partial list of the newer or recently reemphasized management practices includes—

- Management by Objectives (MBO)
- Job redesign (including use of ergonomics)
- Incentive systems (such as the Scanlon Plan)
- Employee participation practices
- Flexitime
- Lifelong employment with lifelong training
- Management development
- Improving the work environment
- Time management
- Career development and planning

Upgrading and retraining of workers have also been recognized as vital elements of human capital investment. Until recently, most American companies' human resources investment policies have focused on the maintenance rather than the development of human resources (Leach 1977). However, the increasing rate of technological change and our current unemployment problems not only demand the upgrading of employees and the retraining of displaced workers, but also require it to be done more frequently during the course of people's work lives. With the shifting demographics of the decade reducing the influx of youth into the labor market, American industry will have to rely even more heavily on adult workers in their prime employment years. American companies, labor organizations, legislators, and educators who ignore the importance of developing our human resources may do so at the peril of our nation's economic stability.

THE ROLE OF THE TWO-YEAR COLLEGE IN ECONOMIC DEVELOPMENT

Rationale for Involvement

Vocational-technical education has historically played a vital role in meeting the changing educational and economic needs of American workers and the nation (Clayton 1982). Two-year colleges have proven especially adept in delivering occupational training for adults, particularly those seeking part-time training. However, critics claim that postsecondary vocational-technical education in the past tended to operate on an inflexible school year schedule, to concentrate on teaching general skills, and to employ academically or content-oriented instructors as opposed to student-oriented instructors.

Technological advances, coupled with changes in the national economy, the shift from labor-intensive to capital-intensive production methods, the aging of the work force, and increasingly high rates of unemployment over the last decade have moved two-year colleges to seek ways to become more involved in economic development. As there have been few direct initiatives at the federal level to involve two-year colleges in economic development, state systems or individual community colleges have had to devise their own strategies. New roles have emerged or are emerging for two-year colleges, including (1) more innovative training and educational programs; (2) a variety of industry services programs; (3) closer attention to the special needs of adult learners; and (4) new and closer linkages with state and local agencies, industry, unions, and professional and trade associations.

In some states—such as North Carolina and South Carolina—the necessity of supporting industrial development through flexible and responsive industrial training was one of the primary reasons for the establishment of their statewide technical education systems.

In many other states, two-year colleges have gradually assumed a more dynamic role in their state's economic development programs. In Illinois, Governor James Thompson recently charged Illinois community colleges to—

- conduct business/industry training needs assessments in their districts;
- be prepared to make presentations to firms nationwide that are looking to expand in Illinois;
- become an integral part of the local industrial recruitment efforts, including regular meetings with local business, labor, and government leaders;
- become a front-line resource in training and retraining of new employees of existing and new manufacturers, stepping in to formulate tailor-made programs for specific companies, if necessary;
- put more emphasis on basic education for young people and training for adults oriented toward high-technology industries;
- provide educational counseling to unemployed persons, where possible;
- hold symposiums for top labor leaders and managers, during which increased cooperation between labor and management can be discussed;

- provide continuous information to surrounding industries and communities on the training programs available in community colleges; and so forth. (American Association of Community and Junior Colleges 1982)

These are a few examples of the proactive roles that two-year colleges may assume in their individual or collaborative efforts to meet the economic development priorities of the 1980s.

Two-year colleges can play key roles in the economic development of their surrounding communities. According to Myran (1978):

> Once patterned after the traditional "academy," the community college has found itself evolving toward a "community-based educational resource" model. Functioning on the street corner and in the factory as well as in the classroom, the college has been woven into the fabric of the community it serves. (p. 10)

Two-year colleges can serve the training needs of both the people and the industry in that community. Because those needs are so intimately intertwined, two-year college programs can address many related problems, such as—

- increasing the employability of and helping find employment for displaced workers, the unskilled, and the economically disadvantaged;
- retraining the employable for new employment opportunities in response to changes in the local economy and business and industry needs;
- upgrading workers to increase their productivity, incomes, job satisfaction, and upward career mobility;
- increasing the productivity of labor and reducing labor costs through training, in order to improve the competitive edge of community business and industry;
- stimulating the local economy by aiding small business and entrepreneurs through training and other services;
- stimulating the creation of new jobs in the community by working with community or state agencies in attracting new companies to the area or providing training to aid in the expansion of extant companies;
- aiding in technology transfer through up-to-date training opportunities for adult workers;
- aiding in the retention of financially shaky companies or companies considering moving their operations out of the community, by providing upgrading for employees and/or technical assistance.

In all of these economic development activities, two-year colleges are only one contributing element, of course. Many other factors affect the solvency of a company: the employability of displaced or disadvantaged workers, the productiveness of a new technology, the attraction of a new firm to the community, and so forth. But no one seems to argue against the idea that training such as that delivered by two-year community colleges can be an important element. "Labor productivity," which is strongly affected by training, was cited as the number two factor (after "state/local industrial climate") in a sample of 753 companies building new plants in North

Carolina (Hekman et al. 1982). Customized vocational education is particularly attractive to new or expanding companies, especially in states where entry-level employees are trained to the companies' specifications—with the training tab picked up by the state (e.g., Georgia's "Quick Start" program).

Many companies do their own in-house training, of course, which is in direct competition with community college training programs. But many companies cannot afford to do their own training, or see other advantages (expertise, facilities, certification, etc.) to entrusting upgrading and/or retraining activities for their employees to two-year colleges. There has been evidence recently of an increase in tuition-aid programs and more business-college joint training enterprises (Institute for the Future 1979). Business and industry still depend on two-year colleges to prepare most employees for entry-level positions. By keeping close track of and forecasting shifting labor and skill demands, two-year colleges are in a good position to initiate training programs in time to help alleviate or even prevent potential skill shortages. At the same time that the colleges are helping build state and local labor capacity, they are in a position to direct training programs to meet the workers' needs for quality employment, as indicated by hourly wages or work duration, which is just as important as absolute numbers of jobs for improving the economic welfare of a region's inhabitants. No college consciously seeks to promote low-paying, erratically employing jobs through its occupational education programs.

Two-year colleges are uniquely suited to becoming involved in economic development efforts for a variety of reasons. Most two-year colleges are governed by locally elected or appointed Boards of Trustees whose members often are company executives, community service leaders, politicians, and other persons concerned with and knowledgeable of both community needs and business and industry needs. In most two-year colleges, there are program advisory committees composed of local experts in specific fields who also represent a range of community organizations. Community colleges have more programs for and experience in teaching adult workers and in finding ways to be flexible to meet their needs than does almost any other kind of educational institution. Finally, more than 50 percent of the curricula offered in community colleges nationally are in the occupational realm (MacRoy 1981).

Other advantages of community colleges for delivering upgrading and retraining for adult workers include—

- the ability to provide training needs assessment services for business and industry;
- the flexibility to "accommodate the most creative instruction in the least restrictive environment" (Persons 1978, p. 31);
- the ability to customize training for specific company needs;
- the know-how to conduct pre-employment recruitment and screening for start-up training programs for industry, on request;
- adult literacy training and other remedial basic skills tutoring;
- special training for the handicapped;
- full or partial funding in many cases for customized training through state or other funding sources;
- ongoing courses, seminars, and workshops—customized or not—that may be delivered upon request to company or community sites;

- accreditation, expertise, and credibility for all college related activities;

- support services for adult students, including financial aid, counseling, health services, career planning, placement services, child care centers, and so forth (Alfred 1980).

Types of Economic Development Activities

Charged with such tasks as helping to bring about job creation, provide retraining for displaced workers and other unemployed persons, increase the productivity of the employed through skill upgrading, aid in technology transfer, and stimulate entrepreneurship, two-year colleges have begun to develop new programs and upgrade existing ones. Innovative approaches are being taken by many two-year colleges for both immediate and long-term economic development needs.

A primary approach has been to *upgrade existing occupational training programs* normally offered by a college for associate degrees and one-year certificates. Advances in technologies have forced colleges to scramble to update curricula, introduce new courses, find up-to-date instructional materials and expensive high-technology equipment, and upgrade or locate qualified instructors. For example, many colleges have been introducingcomputer literacy courses into program requirements because of the broad applications of microcomputers across many occupations. In addition, the increasing influx of adult learners (most of whom also work, and whose recent average ages have been around twenty-nine to thirty) has put pressure on colleges to be highly flexible about the times, locations, instructional methods, and sharing of equipment and facilities for most courses.

A related approach has been to *develop new programs* (or completely restructure old ones) in specialties experiencing (or about to experience) increased labor demand. Such programs currently include concentrations in robotics, word processing, laser/optics, medical electronics, hazardous waste control, and so forth. Getting these kinds of programs going can be expensive (particularly in terms of acquiring the latest equipment), but they are critical to transferring of new, more productive technologies and to avoiding or meeting skill shortages.

Short-term training has been an important approach to meeting upgrading or retraining needs that do not require the completion of an associate degree or one-year certificate. Such training may involve accelerated courses, short courses, workshops, seminars, or lectures. Accelerated courses frequently deliver all components of a regular course curriculum, but the training time is greatly condensed and educational experiences involve intensive study. Short courses, workshops, and seminars usually concentrate on upgrading or training for a very limited and specific set of skills and knowledge, and may involve as little as one-half day's training to several weeks' training. Some accelerated courses may grant credit. Short courses, workshops, and seminars often grant a certificate acknowledging completion of training in the limited area of specialization. Colleges develop and offer such courses on topics deemed of high interest to local occupations or industries in general, or may customize the courses to meet specific requests from organizations or companies. The sites where such courses are offered are frequently chosen for their convenience to the students.

Many colleges seek *cooperative education* opportunities for students in various programs where hands-on experience in an actual work setting is a significant advantage. This training involves a certain amount of on-campus classroom training, followed by or interspersed with what amounts to a part-time or full-time internship at the worksite of a cooperating company. Students are given practical instruction, most often in the form of on-the-job demonstration and

practice, and are expected to perform as though they were regular employees as much as possible. This type of training arrangement provides real world work experience—an education-to-work bridge—which gives students quality training experiences, realistic insights into the work world and work environments of their chosen specialization, and not infrequently even creates part-time jobs for the students.

CETA training is another approach by which two-year colleges become involved in community economic development. Intended to provide employability for the hard-to-employ, CETA training is being phased out under the present federal administration, but the training is so needed in some communities that many community organizations and local two-year colleges are working to devise alternative funding strategies to continue the CETA-type training on their own.

Customized training is probably the most notable—and certainly the most noted—strategy in two-year colleges' repertoire of economic development efforts. Customized training came into significant use in several Southern states in the 1960s and 1970s as part of those states' counterattacks on their weak economic situations. Since then, the basic idea has been adopted and adapted by other states and by individual two-year colleges around the country, though the rate of adoption has been rather slow, and many colleges' efforts have been modest—and cautious.

Two main kinds of customized training currently exist: (1) short-term customized training for entry-level positions to aid start-up in new or expanding companies, with all or most of the training costs subsidized by the state; and (2) short- or long-term customized training for upgrading or retraining of extant employees of established companies, with occasionally some small subsidies from the state, but most often with training offered to the company at cost by the college.

Goodman (1980) explains how subsidized start-up training usually works:

> An industry willing to relocate itself to a new state, or an industry which expands in a place it already operates, is provided with job training for its workers at little or, as is becoming the norm, no cost. The programs are usually short-term, ranging from a week to a few months—although in some cases they run as long as a year. The state either provides instruction or pays for the time of the companies' own instructors. Classes take place at a local school, a building rented by the state, or the firm's factory. Equipment and the material are either provided by the state directly or sometimes lent by the industry. Trainees are either not paid at all, or sometimes paid through CETA grants and other federal and state job training monies. The programs generally involve intensive participation of a state's economic development agencies and vocational education departments. (p. 1)

Whether for start-up training or for upgrading or retraining of employees of an established company, customized training tailors each training program to the specific needs of a particular business or industry. According to Lusterman (1977), companies wanting to upgrade or retrain their extant employees seek customized training for three basic reasons:

- To accommodate turnover and growth in personnel
- To adapt to changes in the knowledge and skills required by employees facing technological obsolescence

- To improve the skills and performance of present employees

Customized training has not been without its critics. As Goodman (1980) points out, state-subsidized start-up training has "been criticized as one in a battery of techniques that are being used by states to hire jobs away from one another" (p. 2). Rosenfeld (1982) also charges that "many states cater to businesses that offer low-paying and dead-end jobs" and adds that what big business hopes to gain from the push for customized training is "working stiffs with job-specific skills-the more tailored to unique operations, the better" even though "highly specialized skills geared to a particular piece of equipment or manufacturing process are infrequently transferable to other occupations" (p. 47). Even if this is so, in many cases customized training of employees is a company's alternative to layoffs,* and it seems clear that customized training has a role in job creation, upgrading, and retraining, as well as in technology transfer.

Another economic development need being addressed by two-year colleges is that of *providing training for small business, for entrepreneurs, and for managers*. Small businesses' training needs "are the most difficult to reach through conventional policy initiatives" (Birch 1979, p. 17), even though between 1969 and 1976, small firms were identified as the country's biggest job creators (ibid.). Small companies generally cannot generate enough new jobs at one time to qualify for state-subsidized customized training (such programs require a minimum number of trainees, usually around ten to twelve), they do not have the capital to contract with colleges for upgrading training (even though provided at cost), and generally do not have tuition reimbursement benefits for employees.

A related problem is the "well-established fact that the number of business closures each year exceeds 400,000" (Persons 1978, p. 3). Most of the closures are small businesses, and for many the blame lies in poor entrepreneurship skills. As Persons notes, "The vast majority of business entrepreneurs have had no formal training in business operation or management" (p. 4). In larger companies, poor management can also be disastrous and result in bankruptcy, but more often it is linked with low productivity and high turnover in personnel.

Quite a few two-year colleges have begun to initiate programs to deal with the needs of small businesses. Training, guidance, and technical assistance are made available—either free or at very low cost—to small businesses, and some colleges have also begun to "initiate and facilitate a common forum for small businesses and agencies involved with small businesses, for mutual information and aid" (Paul and Carlos 1981). Entrepreneurship training is becoming a particular focus for some colleges' programs. In addition, many colleges have established programs or institutes to deliver management training in the forms of seminars, courses, and entire credit-granting programs. Such training generally includes training in new management practices such as those mentioned earlier in this section.

Another area of two-year colleges' economic development outreach is in *guidance and counseling, placement, and remediation of basic skills for adults*. All are attempts to increase the employability of adult workers, many of whom are displaced from prior jobs. Colleges provide these services on campus, but often take them right into the community through continuing education programs, job clinics, tutoring, GED programs, and "storefront counseling."

Two-year colleges also provide *technical assistance* to community organizations and local companies. Technical assistance may take many forms, from aid in community surveys and needs assessments, to participation on various boards and testimony at hearings, to provision of free demonstrations of high-technology equipment owned by the college, to collection and

*Personal communication with James O'Hara, Operations Personnel Manager, Quasar Electronics Corporation, April 1982.

distribution of such community data as local wage standards and employment practices. Colleges that make economic development participation a priority actively seek ways to stretch their resources and find more and better ways to put them to work for the good of the community.

CHAPTER 3

CASE STUDIES

INTRODUCTION TO CASE STUDIES

Publicly funded two-year colleges exist in widely varying environments and economic climates. They have different histories, different missions, and function within different kinds of state educational and economic development systems. The case study approach was selected as the best means to illustrate how colleges in diverse environments can provide leadership for economic development in their communities and establish strong programs for upgrading and retraining of adult workers for industry. Through this means, other colleges should be able to identify with situations that relate to their own needs, and benefit from the examples cited. The colleges selected for study represent the diversity mentioned above. A brief description of the particular contribution of each selected college follows.

Tri-County Technical College

This college was formed to serve the training needs of industry in South Carolina, and particularly those of the industry and people in its three-county service area. It functions in a centrally controlled, state-run system for technical education and economic development. This small rural college has as its central mission (1) the provision of start-up training, upgrading, and retraining to attract new industry, (2) to serve current industry, and in so doing (3) to provide jobs and a better life for its people. As such, Tri-County Technical College and South Carolina's Technical Education (TEC) System provide exemplary, highly developed models for providing special services to industry and aiding the economic development of the state.

Macomb Community College

This college serves the economically depressed area on the northern edge of metropolitan Detroit. The economy of the area is closely tied to the automobile industry. The College has taken strong leadership in rallying the key community and governmental organizations and agencies to address the economic development needs of the area.

Macomb is the largest community college in Michigan. In that state, community colleges have a great deal of autonomy, with the state unit for postsecondary education largely performing in an advisory role. With the state's stringent financial situation applying also to education, the administrative staff of Macomb College has skillfully used the resources of the College to serve the upgrading and retraining needs of industry in the area. The College seizes the initiative whenever the opportunity presents itself to contribute to the economic betterment of the area through its educational expertise. Two prime examples are its involvement with the Ford Motor Company and the United Auto Workers in their National Development and Training Center, and with Volkswagen of America as the company establishes its American headquarters

State Technical Institute at Memphis

The mission statement of this two-year technical institute clearly identifies that an important part of its function is to serve the specific needs of business and industry and to maintain the institutional flexibility to do so. Toward this end the Institute has established a separate division, equal in power to the other divisions in the Institute, to cross-train or upgrade employed persons. The Business, Industry, and Government (B.I.G.) Training Division has the flexibility to provide whatever training is needed, where and when it is desired, and at a minimal cost. The Institute is under the governance of the Tennessee State Board for Vocational Education.

Triton College

Triton, a two-year community college, is located in the near-west suburbs of Chicago, which are home to more than two thousand businesses and have the highest manufacturing density in Illinois. The College has established a reputation for training in high technology and has geared up to meet industry's need for upgrading and retraining. College staff members are very skilled at marketing the resources of the College, which has gained a national reputation for its services to industry. The College's Employee Development Institute and its Job Training Institute have upgraded job skills and provided retraining for more than twenty-five thousand employees for area companies. Through what administrators of the College call "environmental scanning," they are sensitive to the training needs and the opportunities to serve, as those opportunities occur. The College has provided leadership in the state in calling attention to the role that community colleges can and should play in economic development.

South Oklahoma City Junior College

This two-year institution was founded in 1972, making it the youngest college in our study. It is part of the Oklahoma State System of Higher Education, and although it is called a junior college, in actuality it functions as a comprehensive community college. The College stresses the importance of learning as a lifelong process, and its mission statement identifies recurrent career education as part of its primary objective. The structure for providing customized training for industry is a decentralized one. A dean for industrial relations is responsible for interacting with executives in industry and for coordinating the use of the College's resources in responding to industry's needs. The main contact and development person for industry services is the industry education coordinator, who serves as a team leader in using faculty and other support personnel to provide customized training for industry.

The most distinctive feature of the College is its competency-based approach to both education and College administration. The competency-based approach works well in serving the upgrading and retraining needs of industry. Comptency-based modules are available and are useful for communicating to companies what specific competencies can be achieved by the training. Not only are there student learning objectives, but performance criteria are established for all College programs, personnel, and the College itself. The success of students, College employees, programs, and the College are evaluated against these objectives.

Outline for Case Studies

The information in the case studies is organized around the following outline:

I. OVERVIEW OF COLLEGE AND SETTING

II. OVERVIEW OF STRUCTURE FOR UPGRADING AND RETRAINING

- A. State-level Structure
- B. Institutional Structure
- C. Structure for Economic Development
- D. College Structure for Upgrading and Retraining

III. CUSTOMIZED TRAINING PROGRAMS AT THE COLLEGE

IV. OVERVIEW OF PROCESS FOR DELIVERY OF UPGRADING AND RETRAINING

- A. Linkages
- B. Program Design and Delivery

V. SUMMARY

Matrices for Case Studies

Figures 3 and 4 are matrices of unique and common features of the five case studies. Figure 3 identifies the most significant environmental and structural features of each college, and figure 4 identifies the colleges' most significant programs for economic development outreach. These matrices should help readers identify and locate those case studies whose major traits and programs most closely relate to their own situations or interests.

Significant Dimensions	Macomb Community College	State Tech. Institute at Memphis	South Oklahoma City Jr. College	Tri-County Technical College	Triton College
LOCATION					
Urban		●	●		
Metropolitan/Suburban					●
Rural				●	
Sun Belt		●	●	●	
Snow Belt	●				●
ECONOMIC DEVELOPMENT STRUCTURES					
Part of state economic development system	N	●		●	N
State funds for customized training	N	●		●	●
State resource centers for high-tech training				●	
Formal college structure for economic development	●				●
Designated industry services coordinator	●	●	●	●	●
Discrete customized training unit		●	●		●
SPECIAL ECONOMIC DEVELOPMENT LINKAGES					
With industry	●	●	●	●	●
With unions or trade associations	●				●
With professional associations		●	●	●	●
With other educational institutions	●	●		●	
With local organizations	●	●	●	●	●

*Just starting N = Not a strong emphasis at this time

Figure 3. Significant Dimensions of the Two-Year College Case Studies

Significant Activities	Macomb Community College	State Tech. Institute at Memphis	South Oklahoma City Jr. College	Tri-County Technical College	Triton College
Regular program upgrading	•	•	•	•	•
New high-tech programs	•	•		•	•
Customized start-up training	•	•		•	•
Customized upgrading and retraining	•	•	•	•	•
Short courses, seminars	•	•	•	•	•
CETA	•	•		•	•
Cooperative education	•	•	•	•	•
Other industry services	•	•		•	•
Special counseling, placement, remediation for adult workers	•		•		•
Services for small businesses and entrepreneurs	•	•	•	•	•

Figure 4. Significant Economic Development Activities of the Two-Year College Case Studies

OVERVIEW OF COLLEGE AND SETTING

Tri-County Technical College is situated in the Piedmont region of northwest South Carolina, and serves the people and industries of Anderson, Oconee, and Pickens counties. In 1981, it had a total enrollment of 16,316 students, 80 percent of whom were concurrently employed, and 13 percent of whom were continuing their education.

Tri-County was created in 1961 by the South Carolina General Assembly and opened in 1962 as a technical education center for the three counties. Since then, it has grown to become a comprehensive community college offering technical and vocational training, two-year associate degree programs in the arts and sciences, college credit courses for high school seniors, a strong developmental program in adult education, and more than 200 noncredit courses in continuing education.

A very special aspect of Tri-County is its role as part of the state's Technical Education (TEC) System, which has been a model for customized training for business and industry since its inception in 1961. Through the TEC System's Division of Industrial and Economic Development, Tri-County is a part of a continuing, statewide economic development thrust that offers, through its Special Schools programs, free training for new and expanding businesses and industries. This is the state's widely discussed "Start-up in the Black" effort, in which preemployment training of new employees enables them to be fully productive from the first day the new plant opens—allowing the company to start up "in the black." The effort reflects the state's philosophy that its people represent its single greatest asset. Since 1961, TEC's Special Schools have provided customized preemployment training for over 600 industries and 71,000 people, through Tri-County and the other fifteen technical colleges in the system.

Tri-County is acutely aware of its role in both local and state economic development, as well as its mission to serve the occupational training needs (especially for upgrading and retraining) of the people in its service area. The College is a prime example of an effective component in a statewide economic development plan.

OVERVIEW OF STRUCTURE FOR UPGRADING AND RETRAINING

State-level Structure

State Legislation for a Statewide Occupational Education System

The Technical Education (TEC) System was established by the state legislature in 1961, and created a statewide system of two-year technical colleges. That Act was later amended in 1972, and again in 1976, when the South Carolina Board for Technical and Comprehensive Education was made a continuing "body and agency and instrumentality of the State" (Act 654, amended June 17, 1976). These amendments gave the Board complete jurisdiction over all state-supported technical institutions and their programs, including "all postsecondary vocational, technical, and

occupational diploma and associate degree programs financed in whole or in part by the state that lead directly to employment" (Section 1). All courses, programs, and institutions under the jurisdiction of the Board are designated as the South Carolina Technical Education (TEC) System. Besides programs related to the functions of comprehensive community colleges, its programs are specifically charged with coordinating closely with the state's economic development efforts.

South Carolina's Technical Education (TEC) System

The TEC System, instituted in 1961, currently consists of sixteen technical colleges and six Innovative Technical Resource Centers, which deliver occupational training and continuing education courses within a thirty-mile commuting distance of about 95 percent of the state's population. The TEC System is committed to providing a high quality, economically feasible education system that serves both the state (through economic development) and the individual (through career preparation, upgrading, retraining, and personal enrichment). TEC's long-term goals* are as follow:

- Meet occupational needs by providing associate degree, diploma, and certificate programs open to all citizens in postsecondary vocational and technical education
- Meet the needs of new and expanding industries and other employers and promote economic development by providing industrial services and manpower [sic] development programs and services
- Meet the needs of individuals for upgrading and developing skills and knowledge by providing adult and continuing education programs
- Meet the needs of individuals who have not yet made career decisions by providing access to the first two years of college through college parallel programs
- Meet the cultural and general education needs of local areas by providing community service programs
- Help students achieve personal and professional objectives by providing a comprehensive student services program with a strong emphasis on counseling
- Improve instructional effectiveness and help students learn by employing systematic instructional approaches and modern technology
- Provide the management support necessary to make educational programs effective by employing systematic planning approaches and modern technology
- Project a favorable public image as a unique part of higher education, maintain effective relationships with other agencies, and expand financial resources by employing systematic public information and fund-raising procedures
- Make the "open door" a reality by minimizing geographic, economic, academic, and other barriers to education opportunity while striving to make each student successful. (Tri-County Technical College 1981, p. 22)

*No priority is implied in the listing, as priorities change from year to year.

These goals apply to all sixteen technical colleges around the state, and are their guiding principles.

Specific state Board responsibilities. The Amendments to Act 654, Section 5, stipulate specific responsibilities for the state Board in administering the TEC System. In brief, these require the Board to—

- be responsible for the state-level development, implementation, coordination, and operation of post-high school vocational, technical, and occupational diploma and associate degree programs financed in whole or part by state funds; such programs are to have a strong emphasis on the employment needs of the state, communities, and people of South Carolina;
- establish criteria for and approve awarding of certificates, diplomas, and associate (but not baccalaureate) degrees;
- accept and administer donations of funds, grants, real property, or equipment;
- establish minimum and maximum tuition and fees with the approval of area commissions;
- establish criteria and approve new facilities or modifications to existing ones (although locations for such facilities are subject to approval of the local commissions);
- continue the Special Schools training programs for new and expanding industry and business, closely coordinated with the state's economic development efforts.

Specific area commission responsibilities. In Section 6 of the Amendments for Act 654, the state Board is charged with establishing statewide policies and procedures, but the area commissions are given the following rights and responsibilities:

- participate and provide input in formulating statewide policies and procedures;
- take primary responsibility for local governance and supervision of the technical colleges in their districts, in accordance with state-level policies and procedures;
- administer institutional fees, which are regarded as local funds under the guidelines of the state Board;
- appeal to the Budget and Control Board, when necessary, any final decision or action of the state Board;
- acquire sites and construct and equip facilities according to local need, with all real property being possessed by the area commission except those campuses already owned by the state, and with all personal property purchased with local funds remaining the possession of the area commission;
- accept gifts, grants, donations, devises, and bequests of real and personal property for the institutions under their administration;
- supervise the maintenance of the facilities, as well as their operation and improvement;

- exercise the right of eminent domain in their geographical areas;
- apply for, receive, and expend monies from all state, local, and federal agencies;
- keep full and accurate records and establish accountability procedures;
- prepare and submit budgets for review by the counties they serve, as well as by the state Board.

Special Schools programs. Many states have governing boards for statewide community and technical colleges, but one program area mandated by the state legislature—the Special Schools—is unique to South Carolina. Special Schools are customized training programs run on a temporary basis by the individual technical colleges to meet the specific needs of new or expanding companies in their service areas. The Special Schools are provided free—or at very low cost—to such firms, so long as they show that their moving into the area or their company expansion will create a minimum of twenty new jobs. The Special Schools operate under the management of the Division of Industrial and Economic Development of the state Board, although the individual technical colleges provide the services.

The state Board assigns industry services representatives to the technical colleges to help them make contact with such companies as may require Special Schools programs. The programs involve a closely coordinated working relationship between the college, the industry services representative, and the staff of the particular company to ensure proper scheduling and development of high quality instruction. Instruction may take place on the college campus, in the plant, or at another mutually agreeable location in the service area.

Special Schools programs involve cooperation in the following specific areas:

- Identification of required skill levels of the jobs to be performed.
- Preparation of a lead-time schedule covering all factors, such as development of training materials, recruitment and selection of trainees, class start, class duration, class completion, employment of instructors, and so forth. The scheduled time for training completion is two weeks prior to the hiring need date.
- Development of a recruitment plan with the company to ensure that trainees meet company criteria.
- Delivery of training prior to employment by the company (in most cases).
- Operation of classes in the evening or at other convenient times to allow trainees who are still employed (at the company or elsewhere) to participate. (South Carolina State Board n.d.)

Advantages of Special Schools programs to new and expanding companies are numerous. The programs enable companies to "start-up in the black" with trained employees who are fully productive from virtually the first day they work. Other advantages include the following:

- Motivated trainees. Applicants for Special Schools training are motivated to participate in the training by the opportunity to gain a position that is higher paying, and by the chance to learn to work at a higher skill level. Trainees in preemployment classes are not paid by TEC or by the company; they come on their own volition and on their own time.

- Qualified trainees. During training time, any trainees who do not measure up to the standards set by both TEC and the company are terminated by TEC.

- Up-to-date training on state-of-the-art equipment. TEC frequently provides the equipment for preemployment training. In cases where the equipment is not available, TEC asks the company to loan such specialized equipment.

- Qualified instructors. TEC normally secures instructors locally (from the technical college or elsewhere) and pays them for their services. In some specialized training, TEC asks the company to provide skilled persons to assist in the training, and reimburses the company for the salary paid those persons for the actual hours they serve as instructors.

- Customized, up-to-date instructional materials. These materials, including manuals and visuals, are tailored to the company's specific needs. They are provided in part by TEC and in part by the company, depending on the requirements of each program.

- Training supplies and hand tools. TEC provides all these for preemployment training.

- Training facilities. Except in those cases where a company requests or the program requires on-site training, programs are conducted in classrooms or laboratories on the technical college campus, or at other facilities (which may be constructed by the TEC college to suit) convenient to the trainees. (South Carolina State Board n.d.)

The TEC System also provides other services related to Special Schools that are not specifically preemployment training. Industry services representatives at the technical colleges maintain continual contact with companies in their service areas, staying tuned to ongoing training needs. They also compile data for the state's annual wage and practices survey, which is published by the TEC System as a service to industries. In addition, the TEC System supports the Special Schools in the following ways:

- By maintaining a media support center to assist in the design, layout, illustration, and printing of instructional materials and the design and production of visual and audiovisual materials for training.

- By maintaining a crew of skilled craftspersons to prepare training sites and set up equipment.

- By providing on-the-job training, beyond preemployment training, in the event that the initial training did not attain the required level. In such cases, TEC reimburses the company for the costs of the instructors' compensation for OJT [on-the-job training]. Such instruction, of course, takes place in the company's facilities, utilizing the company's materials.

- By maintaining a crew of skilled technicians to repair and rebuild TEC's machine tool equipment. (South Carolina State Board n.d.)

"Design for the 80s" program. Six Innovative Technical Resource Centers are located at and affiliated with six of the TEC System's technical colleges. The Centers are the major strategy in the TEC System's "Design for the 80s" program. Recognizing the rapid changes in technologies being used by or introduced into industries around the country, as well as by those companies moving into or already operating in South Carolina, the "Design for the 80s" program was

developed to meet the expected needs of South Carolina businesses and industries in this decade.

Each Innovative Technical Resource Center specializes in one high-technology area. The six areas of concentration are: (1) advanced machine tool technology; (2) robotics; (3) computer applications; (4) microelectronics; (5) the office of the future; and (6) environmental quality.

The primary objectives of the Innovative Technical Resource Centers are to assist all TEC colleges in meeting the state's high-technology needs. Tri-County Technical College was selected as one of the Center sites, and has established the Microelectronics Resource Center to help keep South Carolina's microelectronics instructors and workers on the cutting edge of the technology. The Centers are already providing vital training in a decade when the TEC System estimates that 75 percent of all new jobs will require technological training below the baccalaureate level (South Carolina State Board n.d.).

South Carolina's Economic Development Structure

Until the early 1960s, South Carolina was essentially a poor state whose economy was composed mainly of agriculture and a faltering textiles industry. In 1961, the state legislature began to take a number of strong measures to turn the state's economy around, by establishing the South Carolina State Board of Economic Development and by mandating a comprehensive set of programs designed primarily to attract new, diversified industry to the state. Some of these programs included—

- revenue bonds that let county governments help prospective or expanding businesses finance land, buildings, equipment, or research and development facilities;
- the South Carolina Manufacturers Inventory Tax exemption, whereby a manufacturer's inventory, goods in process, raw materials, or finished goods are exempt from local and state inventory taxes, except for those goods that are for sale at retail;
- free plant location assistance provided by the State Economic Development Board;
- the Great Towns program, a voluntary program instituted by the state governor, by which towns qualify for the title of a "Great Town" by completing strict criteria to prove their total preparedness as a superior location for new industry;
- a statewide, comprehensive occupational education system (the TEC System) of technical colleges (South Carolina State Economic Development Board n.d.)

Institutional Structure

Tri-County Technical College Organization

As part of the TEC System, Tri-County Technical College is administered by the South Carolina State Board of Technical and Comprehensive Education. Through its Division of Industrial and Economic Development, its Special Schools Division provides customized training to support economic development. In keeping with the TEC System structure, the immediate supervision and administration of Tri-County is in the charge of the local Tri-County Area Commission. The commission is composed of nine members—three representatives each from

Pickens, Oconee, and Anderson counties, which are served by the College. Members of the area commission are recommended by the county council or other legislative delegation for each county, and are commissioned by the state governor. Figure 5 illustrates the administrative structure at the state and local levels for Tri-County.

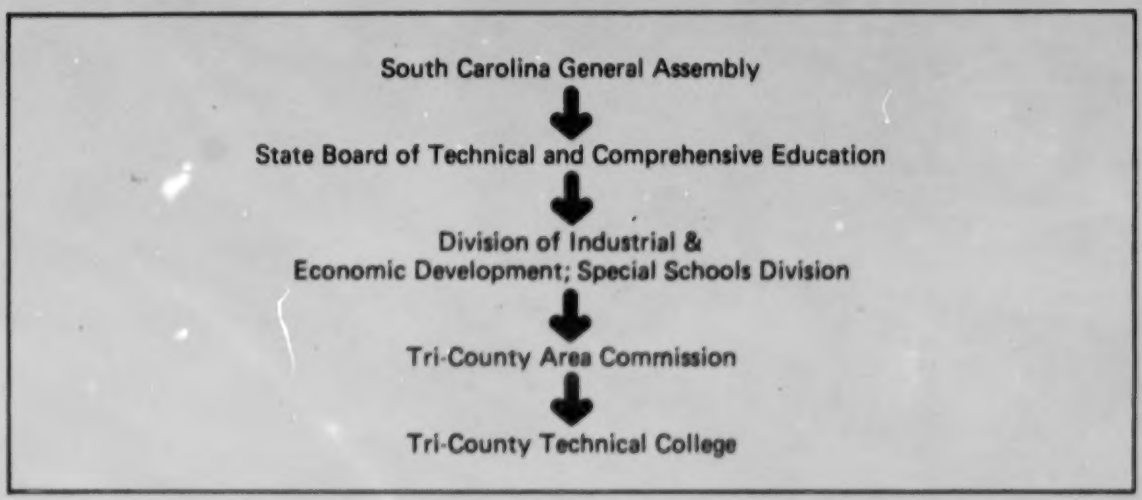

South Carolina General Assembly
State Board of Technical and Comprehensive Education
Division of Industrial &
Economic Development; Special Schools Division
Tri-County Area Commission
Tri-County Technical College

Figure 5. South Carolina Technical Education System (TEC) Administrative Structure for Tri-County Technical College

The Tri-County Area Commission is responsible for hiring and firing the College's president. The president is employed without a contract. All employees of the College at all levels are state employees.

The current president of Tri-County is Dr. Don C. Garrison. In the internal organizational structure of the College, the president presides directly over the public information director, the vice-president for business and finances, the executive vice-president for educational programs, and the director of the Microelectronics Resource Center. All upgrading and retraining activities fall within the jurisdiction of the executive vice-president for educational programs, under whom are—

- the dean of student services,
- the dean of instruction,
- the dean of adult and continuing education,
- the director of the Easley Center.

Almost all upgrading and retraining activities fall with the jurisdiction of either the dean of instruction or the dean of continuing education. Figures 6 and 7 illustrate the organizational structure under those deans.

Dean of Instruction. The general responsibilities of the dean of instruction are stipulated in the job description for the position. They are as follows:

The dean of instruction is responsible to the executive vice-president for providing a sound instructional program for all students, except continuing education; to incorporate a systematic instructional delivery system focusing on mastery learning; and to keep the instructional approach up to date with contemporary research on community college teaching methodology.

The specific duties of the dean of instruction are numerous, but some of the more pertinent ones for upgrading and retraining activities are as follows:

- Conduct continuing research, planning, and evaluation of the development and operation of the institution with reference to curricula, instruction, faculty, students, facilities, and financing for the improvement thereof.
- Formulate plans and proposals and direct the operation and continual improvement of the curricula programs, including provisions for evaluation of the relevance and effectiveness of all curricula, seeing that the educational needs of students are met.
- Develop and promote continuous liaison and communication with business and industry by assuming a significant personal role as well as assigning faculty to appropriate responsibilities which will assure that local employers are well oriented to curricula programs offered to support industrial growth, a skilled labor force, and the flexibility of curricula to meet the changing needs of the community.
- Ensure that each curricula utilizes local advisory committees on curriculum and program development and that records of their activities are maintained.
- Determine the equipment needs for all curricula programs, prioritize the needs, and work with the business office and the development office in procuring the equipment.
- Ensure that the faculty are kept current with the state of the art of instruction and are current with technological changes in their respective curricula.

Dean of adult and continuing education. The general responsibilities of the dean of adult and continuing education are stipulated in the job description for the position. They are as follows:

The dean of adult and continuing education is responsible to the executive vice-president for providing a sound continuing education program; developing and implementing noncredit activities relative to the needs of business, industry, and the general public; designing specialized training programs for specific or unique business or industrial needs; serving as a resource for information concerning the diversity of businesses, industries, and professions within the community.

The specific duties of the dean of adult continuing education are many, but the more pertinent ones for upgrading and retraining activities include the following:

- Maintain contact with area personnel directors, training directors, and business and plant managers within the service area of the institution on a planned and systematic basis to identify immediate and long-term needs for training programs.
- Serve as a training consultant to business and industry to determine training needs within the company.

TRI-COUNTY TECHNICAL COLLEGE

INSTRUCTION

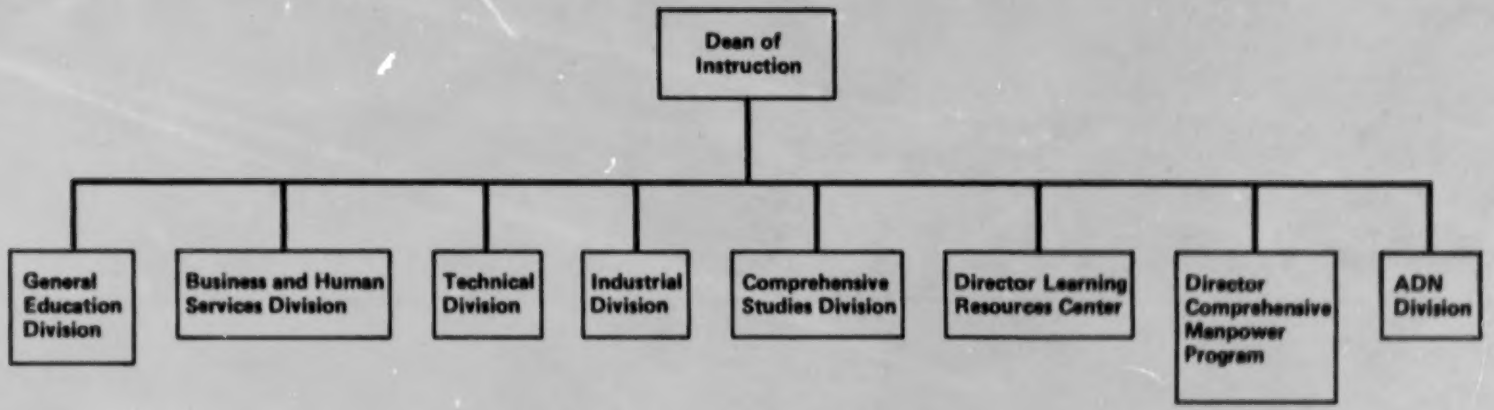


Figure 6. Tri-County Organizational Structure under the Dean of Instruction

TRI-COUNTY TECHNICAL COLLEGE

Continuing Education Division

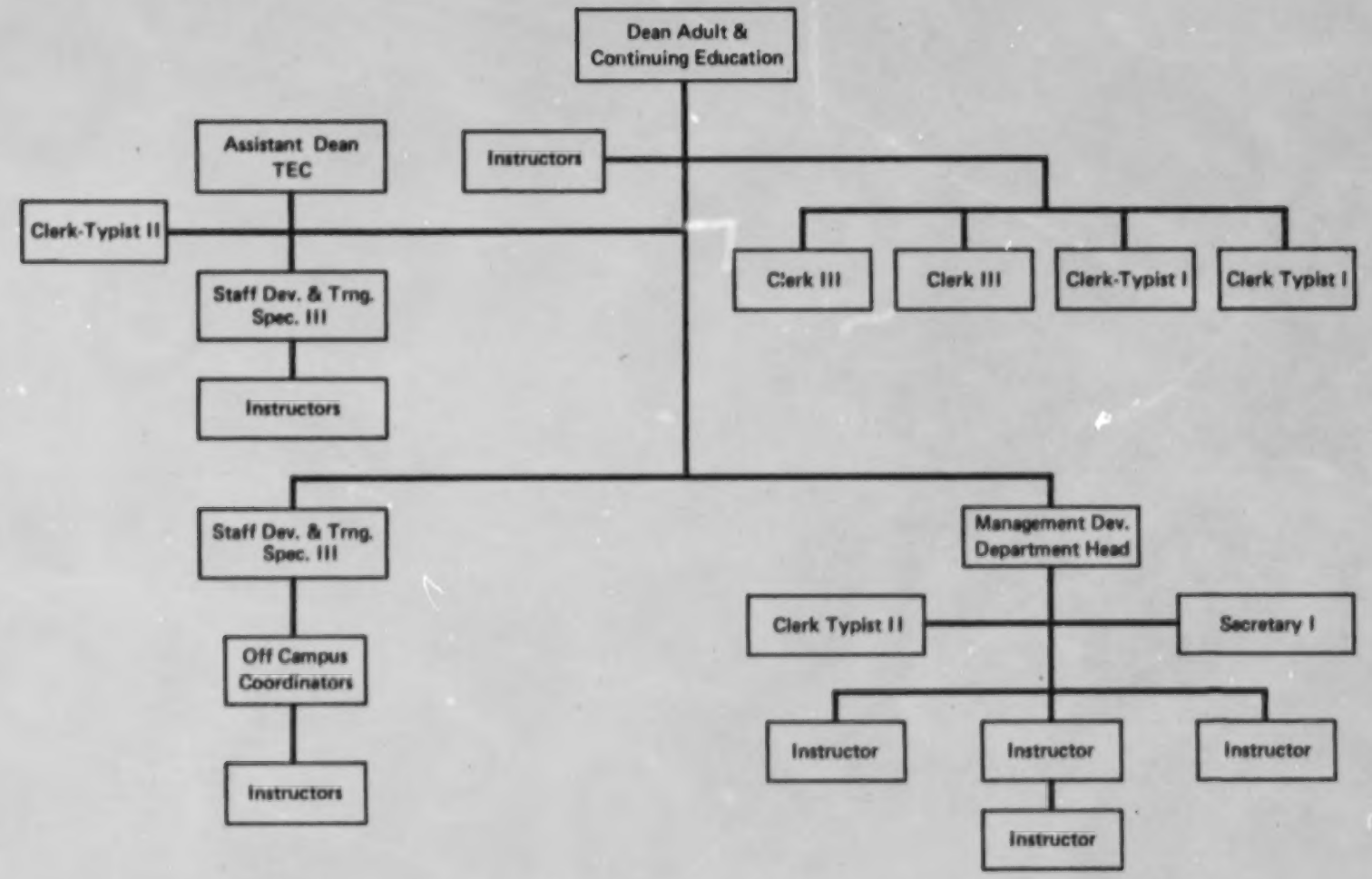


Figure 7. Tri-County Organizational Structure under the Dean of Continuing Education

- Conduct necessary research to design, develop, and establish programs to support specialized training needs within business, industry, and the community.

- Analyze training and educational needs, and establish and conduct credit programs where the needs of the participants are best met by an associate degree or a diploma.

- Recruit and select program faculty.

- Develop and implement a program of orientation, inservice training, and evaluation for program faculty.

- Oversee publicity and promotional activities of the program(s).

- Ensure that course outlines and other instructional materials are developed, procured, evaluated, and efficiently utilized by instructional personnel.

- Develop the equipment needs for all continuing education programs, prioritize the needs, and work with the business office and the development office in procuring the equipment.

All Special Schools programs are under the jurisdiction of the dean of adult and continuing education, as is most adult education (i.e., upgrading and retraining). At Tri-County, continuing education consists primarily of short-term courses, seminars, workshops, institutes, demonstrations, and lectures on a noncredit basis in anticipation of, and in response to, requests and needs of the community. There are no entrance requirements for most of the courses, although some have age restrictions or require a certain amount of prior experience.

Industry services representative. The industry services representative is primarily in charge of the Special Schools programs. Under the TEC System policy, the industry services representative is assigned to the College, but is directly responsible not to the College president, but to the director of the TEC System's Division of Industrial and Economic Development.

The representative works with the College president in all dealings between company and College for customized start-up training through the Special Schools programs. The representative also works with the county development boards to "sell" new industries on coming into the area, and in this role, his "pitch" is to sell companies on what the Special Schools programs can do to get them up and running "in the black" from the first day the new plant opens. He spends a portion of each working day calling on area companies (two to three a day) to talk with company representatives about their potential training needs, especially as they relate to creating new jobs. Since Special Schools programs also extend to existing industries that plan to expand (creating a minimum of twenty new jobs), the industry services representative is also responsible for working with such companies to set up Special Schools programs.

Whereas the industry services representative "sells" the program, it is the College president who makes the actual training commitment. Once agreement has been reached about providing a customized Special Schools training program for a company, the representative is responsible for coordinating all aspects of the program with the College's Continuing Education Division and with the company. This includes the following:

- Determining what Special Schools training needs are by reviewing the company's extant training programs, interviewing its engineers and other personnel, and determining what

specific skills are needed. This is frequently accomplished by conducting on-site visits to existing home plants, using company job descriptions, and so forth. The industry services representative is often accompanied on such visits by the dean of adult and continuing education, technical faculty members, and sometimes the College president.

- Arranging for any pretesting of potential recruits for the preemployment training. This is often performed by Job Services or by the Employment Security Commission, in cooperation with the College. Recruitment procedures, arranged for by the representative working with the College, the company, and (where applicable) Job Services or the Employment Security Commission, are then carried out.

- Working with the company and College representatives (Continuing Education Division) to set up a workable schedule for pretesting, recruiting, training, and conducting of hiring interviews to meet the company's needs.

- Coordinating the development (by TEC) of customized training programs, instructional materials, audiovisual aids, and so forth.

- Coordinating the identification or remodeling of necessary training facilities through the College and/or the area commission.

- Coordinating the acquisition of necessary equipment (if highly specialized, trying to arrange with the company to borrow it), hand tools, materials, and so forth.

- Coordinating funding of the Special Schools programs with the College and the area commission, or reimbursement to the company in some situations.

- Coordinating the arrangements with the dean of adult and continuing education and with the company for the selection or hiring of instructors for the program, including the borrowing of instructors from among skilled company employees, where necessary.

In all of these activities, the industry services representative is responsible for working with local community agencies, as well as with the companies and the College. He works directly with designated company staff (often the company president or the personnel or training director) and with the College president and the dean of continuing education, in particular.

Whereas the industry services representative's chief area of responsibility is the Special Schools programs conducted by Tri-County, he also operates as a part of Tri-County's "team," whose commitment is to meet the occupational advancement needs of the communities it serves, as well as the training needs of companies. Because the representative is in intimate, day-to-day contact with area companies as part of his Special Schools responsibilities, he is in a unique position to feed back information to the College on upgrading and retraining needs that are not eligible for Special Schools funding. This feedback is particularly useful to the Continuing Education Division, which conducts customized as well as noncustomized upgrading and retraining courses. The representative also feeds information back to the School of Instruction about training related to credit courses that may need to be upgraded for the benefit of the general community. In many such cases, the representative puts the right College staff in contact with the various companies. While the representative does do some "selling" of non-Special Schools upgrading and retraining offerings from Tri-County, his role is less direct here, consisting more of making companies aware of the College's range of services and pulling the right people together.

The industry services representative serves the College in other capacities. He assists in conducting community and company surveys and needs assessments, both formal and informal. He passes names to the dean of adult and continuing education of persons in companies who express a desire to teach part-time at the College in their off-work hours (this is especially useful to the College for career advancement courses in highly technologically advanced subject areas). He meets every month with key community agencies and with area personnel agencies seeking people to hire, thus informing the College of hiring trends and needs, and he also communicates TEC policies and ideas to those external persons and agencies. Finally, he is a major resource in the College's communications system.

Mission of Tri-County Technical College

In Tri-County's (1981) *'80-'81 Annual Report to the People*, the College describes its purpose in the following way:

> A comprehensive community College seeking to provide equal opportunity for all, Tri-County . . . recognizes its responsibility to Anderson, Oconee, and Pickens Counties and to South Carolina by: (a) responding to the needs and abilities of all students, helping them to attain their educational and occupational goals in a positive student-centered learning environment; (b) assisting all students to recognize their potential as worthwhile and productive members of society; (c) providing a quality education at the lowest possible cost; (d) serving the employment needs of business and industry; (e) responding to the economic growth of the area. (p. 22)

Institutional Funding

TEC System funding. The TEC System is essentially funded by state tax revenues. Amendments to Act 654 read:

> State funds for the South Carolina Technical Education System shall be appropriated to the Board by the General Assembly and funds budgeted for the technical institutions shall be allocated in a uniform and equitable manner. Monies appropriated for Special Schools shall be retained at the state level and expended upon recommendation of the Board.

However, local funds are also intended to be an important resource for the technical colleges. These funds come primarily from student tuitions and local tax revenues. The area commissions are charged to prepare budgets for such local revenues, which are subject to approval by the county governing bodies served by the local institutions.

The colleges are also eligible to receive state funds for capital facilities, but 20 percent of such facilities' costs must be provided by local funds.

College funding. Funding for Tri-County comes from a wide variety of sources, with the largest income coming from the state, followed by the federal government, student fees, the three counties in the service area, and miscellaneous sources. Figure 8 shows a composite of the College revenue sources.

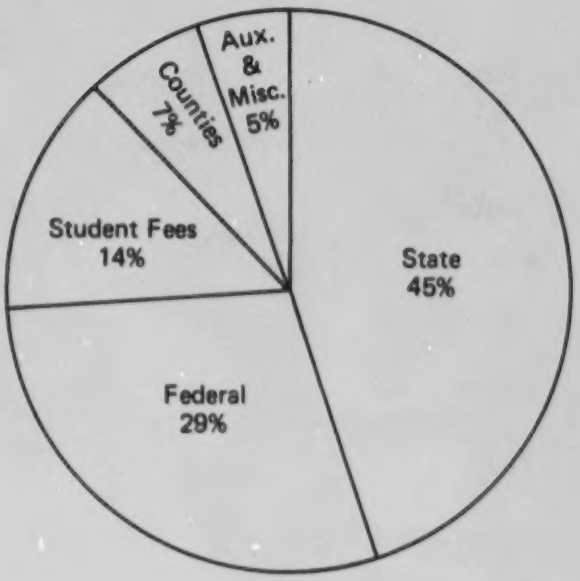


Figure 8. Sources of Revenue Composite FY 76—FY 80

SOURCE: Tri-County Technical College, 1981

Monies from the three counties have amounted to approximately 7 percent of the College's funding.

Credit courses and noncredit courses under continuing education for occupational advancement are paid by student fees and state monies. The state reimburses the College by credit unit. Noncredit courses are counted as continuing education units (CEUs), which are recorded and converted (according to a particular formula) into a certain number of credit hours. State funds pay for converted CEUs, though not at the same rate as for degree credit hours. Only a percentage of CEUs are reimbursed by the state, and these must be for occupational advancement courses.

Capital funding of buildings, on campus or elsewhere, is paid for by the three counties in the College's service area. The College receives a general budget allocated from the counties' tax revenues each year.

All Special Schools programs are funded directly by the three counties, which are administered by county councils. To initiate a Special Schools program, the College must submit a budget to the area commission, which in turn goes to the county councils for the funds. These legislative delegates from the three counties must approve Special Schools funding. According to Pete Stathakis, a member of the Anderson County Planning and Development Board and a key figure in economic development efforts in the Tri-County region, start-up investments through the Special Schools generally pay for themselves by the second year.

In the last few years, the Tri-County service area has suffered from financial cutbacks, as has most of the country. Cuts in funding for new or special programs in the College have been affected by federal, state, and local agencies. The College has been trying to hold the line on student tuition, as well as on costs of customized upgrading and retraining (non-Special School courses) for industry. To counter the economic crunch, Tri-County has launched efforts to utilize and share internal resources more efficiently, and to make better use of low cost, high productivity technologies, such as computerized enrollment procedures.

Distinctive Features of the College

Institutional commitment is the theme under which most distinctive features of Tri-County may be subsumed. This theme finds expression in three major areas: (1) the philosophical environment of the College, (2) the role of the College president, and (3) the cohesiveness of staff in support of the College philosophy. A number of exemplary activities also distinguish Tri-County Technical College.

Philosophical environment of Tri-County. Tri-County, in the belief that people are South Carolina's greatest asset, has set an example as an institution thoroughly committed to serving state and local economic development. The goal of "a better life for all" puts a strong emphasis on bringing in new companies and contributing to the expansion and productivity of existing ones through training of a work force that can make effective use of high technology. In this way, a healthier economy is expected to bring a higher quality of life to the area, meeting South Carolinians' desires for better jobs and life-styles, and companies' desires for better workers. All facets of Tri-County are part of this philosophical environment, regardless of their direct or indirect involvement with occupational training.

Role of the College president. Enthusiasm, cooperation, and flexibility mark the College's actions in putting its philosophy into effect. Nowhere can this be seen more clearly than in the role of Tri-County's president.

Dr. Don Garrison has applied great energy to putting the institution's philosophy to work. He has become personally involved in a wide spectrum of College activities, most visibly in the role of "salesman" and facilitator for industry services programs.

The president spends considerable time working with the industry services representative and the various county planning and development boards and directors to help make potential employers aware of what the TEC System—and Tri-County in particular—can do for a new or expanding company. In pursuing this important economic development role, the president makes himself available for discussions, meetings, tours of the local communities or the College, and so forth. If he is not available for such promotional work, he makes sure that another knowledgeable person is—usually the industry services representative, the executive vice-president for educational programs, or the dean of adult and continuing education.

The president emphasizes the importance of proving the commitment of the community and the College to industry when he says, "Good intentions are not enough—you need evidence in terms of a track record and in terms of dollars committed."* Moreover, he assures companies that Tri-County does not "divorce" a firm once its start-up needs are fulfilled; the College trains a continuing supply of highly qualified graduates for industries in the service area. He is also

*Personal interview with Don Garrison, President, Tri-County Technical College, 7 June 1982.

careful to communicate that Tri-County understands that profit must be the bottom line for a productive firm.

Another role for which the president assumes considerable leadership is that of cultivating good communications, cooperation, and articulation with the many local agencies and organizations involved in economic development efforts. Tri-County's cooperative efforts often involve city or town commissions, county planning and development boards, the South Carolina Economic Development Board, the Employment Security Commission and Job Services, Great Towns committees, chambers of commerce, Clemson University, the U.S. Small Business Administration, and so forth.

The president makes himself readily available to College staff in order to streamline communications and efficiently marshal necessary resources. Finally, he acts as a role model for Tri-County's commitment to its philosophy and goals.

Staff support of the College philosophy. Tri-County operates with a fairly informal, friendly management style, yet the level of commitment of the faculty and staff to the College's philosophy and goals is intense. College support units operate in a service mode, with economic development their watchword. The faculty and staff generally consist of "self-starters," who understand the issues and are dedicated to the purposes of the College. College administrators believe that this kind of dedication improves efficiency by as much as 30 percent for some programs.

Faculty and staff commitment also is expressed in the flexibility and cooperation within and between program areas, as well as in dealing with companies' training needs. There is a conscious effort to "use our limited resources to the greatest advantage . . . and everyone is always ready to jump in, put in personal time . . . . This is what is meant by commitment."*

Exemplary activities. So many of Tri-County's activities are exemplary because of its membership in South Carolina's TEC System that it is tempting to say that almost everything the College is involved in is special. Certainly the Special Schools programs stand out as uniquely effective programs for retraining segments of the populace and encouraging job creation and local economic development.

The College's Microelectronics Resource Center is likewise an exemplary asset for upgrading and retraining—not only does it deliver such training directly to companies upon request, it is designed to enable TEC colleges throughout the state to upgrade instructors and curricula, thereby bringing South Carolina's technical colleges to the true cutting edge of technology. The five other Innovative Technical Resource Centers are expected to do the same for their specialty areas.

Many innovative programs at Tri-County are also exemplary. Reaching out to meet the needs of management and supervisory personnel is the new Management Development Division, a pilot project site of the American Council on Education's Higher Education Management Division. The Council's twenty-five management modules offered through Tri-County's pilot program put the College in a potent position to deliver state-of-the-art training in management and supervision.

Another recent innovative program at Tri-County is the Small Business Network, organized and cosponsored by the American Association of Junior and Community Colleges and the U.S. Small Business Administration. As a member of the Network, Tri-County can now identify and

*Personal interview with Don Garrison, President, Tri-County Technical College, 7 June 1982.

deliver quality short-term training to meet the needs of local entrepreneurs, through classes, workshops, and counseling. To strengthen the Network locally, Tri-County has established working relationships with the Small Business Development Center at Clemson University, with the local Senior Corps of Retired Executives (SCORE) business counseling services, and with the local chambers of commerce in its service area. It has also founded a Small Business Resource Center on campus to make available all instructional materials, and to provide counseling facilities, classroom space, meeting facilities for area business organizations, and individualized instruction for prospective entrepreneurs.

Tri-County extends its instructional offerings into the community, locating courses (many of them concerned with occupational advancement) at convenient, off-campus locations around the three counties. The College also introduced telecourses for college credit in the fall of 1981 through the Appalachian Community Service Satellite Network and the Anderson Cablevision System.

A Career Center on campus offers students career decision-making services, including information, counseling, and testing. The federally funded Female-Minority Program assists female and minority students with career planning, counseling, tutoring, financial aid, and so forth. The on-campus Child Development Center provides day or evening child care at reasonable rates for students and staff.

Tri-County's involvement with the CETA programs sponsored by the Employment Security Commission in Anderson is exemplary mainly because the College maintains a deep commitment to retraining of the structurally unemployed, and has expressed its intention of continuing to serve that populace even after federal funds are withdrawn from the program.

College Structure for EconomicDevelopment

At Tri-County, as at all TEC colleges, economic development activities are intimately linked with training services. The theme of economic development permeates every program, be it a more general service for state or local industry, or a specially customized service for a particular company.

Noncustomized Industry Services

The Continuing Education Division is very concerned with meeting the needs of business and industry in Tri-County's service area. It conducts ongoing curriculum revisions, course additions, and implementation of apprenticeship training. In 1981 it introduced competency-based diplomas, which enable trainees and employers to discern the exact competencies graduates have acquired through training. When the College receives requests from companies for customized courses or seminars to fill their need for certain kinds of employee upgrading, Continuing Education analyzes the request to determine whether just those companies need the requested training, or whether it will serve the community better to make such training available as noncustomized occupational advancement courses.

Continuing Education runs about 2 general purpose seminars a week (more than 100 seminars a year) on specific topics. These seminars may be given at plant sites (such as Singer, NCR, or Dan River), community sites (such as area high schools), or on campus. Although these seminars are generally not customized to the company's specifications, a company may request one. Often, companies will send employees to the seminars on campus or at community sites, at the company's expense.

The dean of instruction also keeps close track of business and industry training needs, and adds or upgrades curricula (noncustomized) as the needs become clear. For example, the Technical Division recently added a course for all its students on the value of the free enterprise system. All Technical Division courses will soon include a required computer literacy course. The Business and Human Resources Division has just added a data processing curriculum. These are only some examples of the kind of upgrading and retraining activities administered by the dean of instruction.

The new Microelectronics Resource Center will function as an information clearinghouse on the cutting edge of microelectronic technology—both for updating or developing technician-level curricula for the TEC colleges, and for aiding in technology transfer for South Carolina industries. This latter activity will also involve providing on-line consulting to industries implementing microelectronics-based equipment. In addition, the Center will provide demonstrations of the latest technologies and equipment to industries around the state to stimulate adaptation of the new technologies and aid in increasing the companies' productivity and competitiveness in the national and international markets. This activity will involve the use of mobile labs to take the equipment and demonstrations right to the companies. Finally, the Center will provide seminars, workshops, and short courses—customized and otherwise—in microelectronics and microcomputers, both for employees and managers of South Carolina companies.

A special service to prospective and new industries that the TEC System provides is the state's Industry Wage and Practices Survey. Data for this annual survey are collected by all the TEC colleges and compiled by the State Board of Technical and Comprehensive Education. The survey reports on state and area averages in wages and practices for various businesses and industries, and is intended primarily to help incoming or expanding companies decide where to locate and what the norms for wages and practices are in various parts of the state. Tri-County makes this survey available to any and all interested parties.

Customized Industry Services

Tri-County offers a variety of services specially tailored to the needs of specific companies. Some of these services (i.e., the preemployment training of the Special Schools) are provided free to companies, and others are partly subsidized through the Continuing Education Division. Essentially, four kinds of customized services are offered to new, expanding, or extant companies upon request:

- Preemployment training through TEC's Special Schools programs
- Job Instruction courses for company employees serving as instructors in Special Schools programs
- Upgrading and retraining courses
- Seminars and workshops for upgrading purposes

The Special Schools preemployment training programs—offered to new or expanding companies creating twenty or more new jobs—involve a series of services, of which the training is only one. In essence, these services consist of—

- aid to the company, where necessary, in identifying the required skills and skill levels of the jobs to be performed;

- preparation of a schedule covering all activities, with completion of the program to come two weeks prior to hiring needs;
- development of a recruitment plan with the company, and conduct of recruitment;
- preemployment testing of applicants (often through Job Services or the Employment Security Commission) and screening;
- provision of tailored instructional materials, audiovisuals, and raw materials;
- provision of equipment and facilities, except in circumstances in which highly specialized equipment must be borrowed from the company, or the company requests that TEC's Special Schools programs instruction take place in the plant;
- provision of instructors, where possible (see the discussion of the Job Instruction course later in this section);
- delivery of training and trainee assessments;
- operation of classes in the evening or at other times convenient to trainees.

Tri-County has conducted Special Schools training for a great variety of companies moving into its three-county area or expanding within it. For example, the College has provided customized preemployment training for Michelin, NCR, Steel Heddle Corporation, Orian Rugs, Olympic Stoves, Fry-Togs Corporation, Westinghouse, and Nordson. Since Tri-County opened its doors in 1962, it has trained over five thousand workers in Special Schools preemployment programs.

Occasions arise when a Special Schools program for a particular company requires an instructor with highly specialized knowledge and experience, which are not readily available either from the College faculty or from potential part-time instructors in the Tri-County service area. In such cases, it is often necessary for the company to bring in skilled employees from its other plants. While the Special Schools programs reimburse the company for such employees' salaries for their hours spent instructing, there is frequently a problem with their knowledge of and skill in teaching. In these cases Tri-County provides a Job Instruction course for company instructors participating in Special Schools training activities. The course enables the temporary instructors to teach the customized courses efficiently and effectively.

Tri-County also conducts customized upgrading and retraining of employees in existing companies in its service region, upon request of the company. Such upgrading and retraining courses do not fall within the Special Schools programs, because the companies are not creating additional, new jobs. These customized courses are not provided free of charge; if the training does not involve on-the-job training, however, Tri-County will often absorb part of the expense through a process of converting continuing education units (CEUs) earned by the trainees into credit units, whose costs are reimbursed under certain circumstances by the state. In on-the-job training, the company usually absorbs the costs, paying Tri-County directly. For any customized upgrading or retraining program, however, a company must have twelve or more trainees; twelve is the break-even point at which the College can afford to customize such a course.

Tri-County has provided non-special schools customized upgrading or retraining courses for a variety of companies in its service area, including Dan River, the Riegal Corporation, the Alice Corporation, Parke Davis, and the Singer Company. In 1981, Tri-County's General Education

Division offered college transfer courses for Duke Power employees needing to meet federal requirements for control room operators at nuclear plants. In the near future, the new Microelectronics Resource Center will offer customized high-technology microelectronics programs or courses for industry, upon request.

Full programs or courses are not the only customized instruction offered by Tri-County. Many seminars and workshops are tailored to fit the short-course upgrading needs of local companies. For example, a sixteen-hour course was customized for Oconee Nuclear Station, and half-day seminars were given for the Singer Company and for Oconee Memorial Hospital. The Management Development Division conducted sixty-five seminars in management and supervision in school year 1981-1982, two of which were specifically designed for local corporations. The Microelectronics Resource Center is also conducting short seminars and workshops for employees and supervisors, tailored to company needs upon request.

College Structure for Upgrading and Retraining

Continuing Education Division

All noncredit courses—whether for occupational advancement or for personal interest or development—are within the administration of the Continuing Education Division. As with credit courses offered through the Division of Instruction, continuing education courses, seminars, and workshops are available on campus, at various community sites, or in company plants if requested. Most customized programs for companies do not involve awarding of college credit, and fall within the administration of the Continuing Education Division.

According to the course bulletin for the Winter Quarter of 1982:

> The Continuing Education programs are designed so that individuals may explore new fields of study, increase proficiency in a profession, develop a potential, and enrich lives through cultural and recreational studies. Such a program offers opportunities for lifelong learning, cultural and community enrichment, personal entertainment and recreation, and resources for industry, government, and professional groups. New courses and programs are added regularly, many created by suggestions from past, present and potential students who take an active part in the planning process.

Community service coordinators. The Continuing Education Division has several community service coordinators, part-time staff whose role is "to strengthen communications between the various segments of the community and the College and to provide for the implementation of community-based programs" (*Tri-County Technical College Coordinator's Manual* n.d., p. 1). The coordinators are chiefly community liaisons who make the community more aware of the College's services, and who serve as agents to bring together community and agency resources to cooperate with community continuing education needs and desires.

Division of Instruction

As mentioned earlier, all credit courses and programs are within the jurisdiction of the dean of instruction. Many of these courses, programs, seminars, and other educational activities are offered on the Tri-County campus, at the community centers such as Easley High School, and at company sites in the Tri-County service area. The College offers an associate of arts degree program and an associate of science degree program, both of which are designed for transfer to four-year colleges.

The Division of Instruction is continually growing to meet the educational needs of the community as they develop. New program areas recently installed include the nursing program (to take up the vacuum created by Clemson University's phasing out of its two-year nursing program in 1980), a data processing curriculum, and the new Microelectronics Resource Center and its proposed programs and services.

The Division of Instruction offers credit courses at in-plant sites upon request of companies, and will customize such upgrading and retraining courses.

CUSTOMIZED TRAINING PROGRAMS AT TRI-COUNTY

Customized training programs at Tri-County consist of (1) Special Schools programs, delivered free to new and expanding companies for preemployment, upgrading, or retraining instruction where twenty or more new jobs are created; (2) upgrading or retraining for existing companies where few or no actual new jobs are created, offered through the College's various departments for a moderate cost to companies; and (3) customized upgrading courses or programs where few or no actual new jobs are created, offered for credit by Tri-County's Division of Instruction at moderate cost to companies upon request. Such courses or programs may be offered at a time or location of greatest convenience to the company and trainees—on campus, at rented or remodeled facilities in the community, or at the plant site. A wide variety of companies have been served through these programs.

Procedures for arranging, designing, and implementing customized programs have—within flexible guidelines—been tested and proven, and these are discussed in the "Overview of Process" section later in this case study report. Next, however, this section relates several customized training "success stories"—examples of the kinds of programs and relationships involved in Tri-County's thrust for regional economic development.

Westinghouse Company, Pendleton, South Carolina

Westinghouse and Tri-County have been working together for several years on a number of programs tailored to the company's training needs. According to Westinghouse's personnel manager, Howard Sieber, the availability of preemployment and continuing education through the TEC System and Tri-County "were a major deciding factor in locating Westinghouse's new plant in South Carolina." Tri-County initiated the first meetings between the College and the company to discuss delivering start-up training to Westinghouse through the Special Schools programs. The College president and the industry services representative brought all important parties together at Tri-County, where the College outlined the start-up and other training it would be able to deliver to Westinghouse.

Start-up Training for Electricians and Mechanics

The first program was a Special Schools program of preemployment training for maintenance and craftsworkers, specifically electricians and mechanics. These trainees were to have had prior experience in related maintenance (selected trainees had four to fifteen years' experience), but the company would also need to know what specific skills these trainees possessed. The training program was to accomplish two major tasks: (1) conduct a skills verification program by which the skills of the trainees would be assessed and (2) conduct training to upgrade those skills where necessary and develop new skills where they were absent.

Close cooperation and excellent communications were necessary to make the program work. In order to become familiar with the operations and skills needs for the new plant, Tri-County representatives visited another Westinghouse plant out of state. There, the College representatives met with company people to formulate the plans for the training program. Except for initial orientation, all training was to be performed by Tri-County instructors.

The training itself was very flexible, with continual interaction between instructors and company representatives to allow the company to suggest adjustments in the training to put more or less emphasis on certain areas of instruction where the trainees showed differing degrees of skill. The industry services representative for TEC kept the company attuned to what was going on in the training program, so such adjustments were readily made. Without these close communications, the participants say the program could not have been successful.

Upgrading Westinghouse Production Operators

Following the start-up of the new Westinghouse plant, the company needed to upgrade the training of forty-three newly hired production operators, whose activities were directly related to processes and equipment specific to Westinghouse. Tri-County was unable to provide instructors with the needed proprietary knowledge, so the company itself brought in instructors from its Hampton division headquarters to deliver the special technical training.

The company additionally needed these operators to have lift-truck experience. For this, Tri-County's own lift-truck training program was used in conjunction with some specialized training on the company's unique handling systems (using Yale equipment). The course required a three-way coordination among Tri-County, Westinghouse, and Yale, the supplier of the specialized equipment. Occupational safety laws required that lift-truck operators be licensed, so the lift-truck training had to be a formally accredited program to allow the trainees to be licensed. The Continuing Education Division set up the customized—and accredited—lift-truck course, based in large part on the Division's regular course, but with modifications to meet company needs.

Start-up for Resin Chemists

The start-up training for resin chemists followed the pattern of close cooperation between Westinghouse and Tri-County, with the exception that Tri-County worked with company resin chemists, who delivered most of the actual instruction in labs and classrooms set up by Tri-County as part of the Special Schools services. The company instructors and Tri-County set up the laboratories so they exactly simulated the company's operations—including having the same size, number, and arrangements of lab tables, glassware, and other lab equipment.

Overview of Westinghouse Training

Because Howard Sieber, Westinghouse's personnel manager, is well oriented to the skills content of the many jobs in the plant operation, the planning, scheduling, and implementation of customized training programs were considerably simplified for the College. Sieber was able to specify, with good accuracy, what the company's skill needs were for a specific program. Working with the College, he was also instrumental in developing workable training schedules. This was done by starting with the target date for new employees to begin work (in the case of preemployment training), or the target date for current employees to begin using their upgraded skills. Backing up from the set target date, time was then scheduled for prehiring selection and

screening (where applicable), course development, procurement or set-up of equipment and facilities, and training.

Training programs for Westinghouse have generally used a four-pronged instructional approach, involving use of (1) training manuals, (2) slides or slide-tapes, (3) videotapes of production operations, and (4) practical experience in simulation circumstances. Tri-County and the company have cooperated in writing or adapting instructional materials. The company has written some materials (or adapted its own earlier materials), and Tri-County has written some. Tri-County also prepared 144 minutes of videotape on production operations, which were taped at the company's Hampton plant for use in the Special Schools programs.

Courses tailored to Westinghouse's training needs have generally run three hours a day, and have been held three times a week for eight weeks. This has given students seventy-two hours of instructional experience—a very short amount of time for a great deal of material to be covered, but trainees consistently have met or exceeded the performance standards set mutally by the company and the College.

The four-pronged instructional approach has allowed considerable individualization of training experiences, with students able to access audiovisual aids or practical (simulation) experiences at will. All instructional materials and evaluations have been competency based. In many cases, instructors have served primarily as course managers and resource persons, allowing trainees to gain competencies at their own pace and within their own learning styles.

National Cash Register, Liberty, South Carolina

In 1980, the National Cash Register Company (NCR) expressed an interest in building a new manufacturing plant for point-of-sale terminals in the Tri-County area. Tri-County representatives joined county development board members in meeting informally with NCR representatives. Later, as company interest became firm, Tri-County's industrial services representative went with several other College representatives to visit the NCR plant in Delaware and meet with company people (including the manager of NCR's Manufacturing Engineering Department). As a result of this meeting, the kinds of training for the new plant were outlined, the basic training timeline was worked out, and who would do what in implementing the start-up training was decided.

The company's manufacturing engineers prescribed the essential skills to be taught and the schedule for teaching various subjects. A schedule was worked out by which trainees would attend classes for four hours a day (in the morning, afternoon, or evening, at the trainees' convenience, since most were simultaneously employed elsewhere during training), over a period of eighteen days. This gave a total of seventy-two hours of training for the manufacturing technicians who would be hired by NCR.

To prepare training manuals for the program, NCR's Manufacturing Engineering Department assigned individual engineers to write training manuals in their specialties. This was necessary because many of NCR's manufacturing operations are unique and proprietary. The TEC System's production center printed the training manuals and furnished additional instructional materials, including the math component. (The College often adds a math component to its customized courses, even if not requested. This is because so many adults are found to be weak in basic math skills. The math component, though brief in duration, usually improves students' math skills enormously, as had been proved by comparison of pre- and posttests of such basic skills for all trainees.)

Training took place in a converted senior citizens' center in Liberty, South Carolina. The refurbishment of the center was conducted by the county as part of its commitment to the TEC System. A TEC Special Schools team installed conveyors needed for the course, and maintained equipment throughout the course. Tri-County provided needed hand tools (such as soldering guns) and some special tools for the training process. NCR furnished oscilloscopes and some other special equipment. (For later NCR training programs that were not eligible for Special Schools funding because the new plant had already opened and was operating, NCR furnished its own specific electronics equipment for training, including conveyors, line master benches, and so forth. For the start-up training, Special Schools provided most materials and equipment.)

Prior to the start-up training, Tri-County staff visited NCR's Delaware plant once more and made a videotape of the manufacturing process. The tape was a key part of the training program for start-up in South Carolina.

Because of the highly specialized expertise needed (and not available at Tri-County or in the community), NCR furnished all instructors for the start-up training. Three full-time NCR instructors participated, as well as company specialists who came in on occasion to teach half-day sessions as needed. TEC reimbursed the company for part of the company instructors' salaries for the start-up training. The amount of reimbursement was negotiated with the company, since of course TEC could not pay industry-level salaries for the instructors.

The dedication of NCR's instructors was cited as a key element in the success of the training program. In addition, top management in the company simplified the use of the instructors by relieving such employees of other responsibilities as they were needed for teaching. Without the understanding of such needs at the highest company levels, Tri-County staff members say that the training program would not have been possible.

Class sizes were held to ten trainees for the start-up training. The training approach emphasized to students that not all of them were expected to excel in every training area; the company had positions that everybody could fit into if they were willing to apply themselves. Instructors tutored students individually. No homework was required in the courses, but students were allowed to take textbooks and manuals home, if they wished.

Instructors used questionnaires to get feedback from students during the courses. The feedback was used to gauge student interest and progress. At one point, instructors learned that students were getting bored with seeing too many films too close together, and altered the instruction accordingly. Students were required to sign the feedback questionnaires so that instructors could evaluate individual student progress and tutor the students as necessary. Of 142 trainees, only 2 dropped out of the courses before completion.

At the end of the training, Tri-County held a graduation ceremony for the trainees, presenting them with certificates. On that same day, NCR held interviews with the graduates and hired them on the spot. Of the 140 graduates, all but 22 were hired. NCR expects to hire most or all of the remaining 22 graduates as soon as the economy improves.

NCR is extremely pleased with the productivity of the trainees who are now working for the company. NCR has also hired six supervisors and put them through the same general course as the production trainees. This acquainted the supervisors with what takes place on the production floor, and allowed managers to offer almost all employees in the production department the opportunity to retrain for different jobs. The company can rotate people as they are needed, because everyone is at least familiar with all aspects of production.

Singer Company, Pickens and Anderson, South Carolina

Most of Tri-County's interactions with the Singer Company have not involved start-up training, since Singer has been in the Tri-County service area since the 1940s—before Tri-County was established. However, the company's plants have experienced a series of major changeovers in production, from manufacturing sewing machine cabinets to power tools at the Pickens plant, and from the production of sewing machines to motor products to sewing machines again, then to electronic sewing machines at the Anderson plant. Most of the training—both customized and regular credit courses—that Tri-County has delivered for Singer has involved upgrading and retraining of employees to meet these changing production needs.

Almost 90 percent of Singer's in-plant training for management development has been through Tri-County courses. Customized management and supervisory seminars have also been given at Singer by the College. The College has conducted training on campus for quality circle facilitators for the company.

Singer set up its own tool and die apprenticeship program with the help of Tri-County, which piloted the training. Tri-County courses conducted at Singer's plants have often been offered for credit at the company's request. In fact, more in-plant credit courses are delivered for Singer than for any other company served by Tri-County.

Most customized courses for Singer are offered during the employees' own time after work at the plant site, although on-the-job training has been offered occasionally. Instructors usually are faculty members of the College, or are part-time instructors hired from the community through the College. In some cases, where the College cannot acquire a qualified instructor, company staff members become the instructors. They go through the College's Job Instruction course in order to be able to manage and teach the employees effectively. Occasionally, Singer's training director sits in on classes to monitor their appropriateness and progress. At the conclusion of a customized course, both Singer and Tri-County administer their own questionnaires to the trainees, asking them to evaluate the course.

The company also has Tri-County bring in leisure courses to the plant upon request of the employees. These courses are noncredit and are not work related, but according to Larry Earwood, vice-president for industrial relations, such courses "mix the different departments and employees together so they find out they're all human beings. . . . It also keeps people physically fit. We see that as a cost reduction on our total benefits program."* In addition to in-plant customized courses and leisure courses, Singer pays 75 percent of employees' books and tuition costs for upgrading themselves through the regular industrial programs at Tri-County. If employees complete a degree program related to company needs, the company pays the other 25 percent of the costs.

Singer representatives say that Tri-County's ability to be flexible in meeting the company's training needs has been a key element in making the training programs happen. They also say that because Tri-County has many business and industry people on its TEC Area Commission and on department advisory committees, both the College and the business community are able to understand and appreciate each other's needs and interrelationships.

*Personal interview with Larry Earwood, Vice-President for Industrial Relations, Singer Company, 8 June 1982.

OVERVIEW OF PROCESS FOR DELIVERY OF UPGRADING AND RETRAINING

This section synthesizes the procedures used by Tri-County in its delivery of upgrading and retraining, in order to convey the "how" of customized and noncustomized occupational education at the College. The section reviews (1) the linkages, marketing approaches, and information exchanges vital to the programs, and (2) the important processes and elements in program design and delivery.

Linkages, Marketing, and Information Exchange

Four major actors are involved in making workable linkages for the creation, design, and delivery of upgrading and retraining programs at Tri-County: (1) the state TEC System, (2) the community and county agencies, (3) the College representatives, and (4) the companies served. Upgrading and retraining programs obviously must match not only the needs perceived by potential students, but they must also train for the jobs that are available—filling the personnel needs of companies, whether existing or developing. For effective, on-target programs to be developed and delivered, the actors' relevant values, plans, and actions must be synchronized. Feedback at all stages is vital. Cooperation and flexibility are the watchwords for success.

At the state level, the thrust for upgrading and retraining of South Carolina's work force comes primarily from the TEC System. TEC's sixteen two-year technical colleges and six Innovative Technical Resource Centers are designed to operate in close cooperation with state and local economic development efforts. The TEC System is also a key element in state economic development promotional efforts—through brochures and booklets, through the annual Industry Wages and Practices Survey, through the media, and through presentations by TEC representatives at conferences all over the country.

County planning and development boards and other community agencies cooperate with the local TEC colleges when "courting" prospective employers in their areas. Communities working to meet the strict criteria for "Great Town" status also frequently call upon the local TEC colleges for advice. Job Services agencies and the Employment Security Commission often work closely with the colleges in preselecting, testing, and recruiting trainees for customized training programs, especially for Special Schools programs. Local chambers of commerce and other community organizations and agencies keep in touch with the colleges to provide continuing information on employment trends and related training needs in their areas.

Within Tri-County Technical College, key staff members are responsible for liaison with the communities and with employers. Tri-County's two most prominent actors in this are the president of the College and the industry services representative. Officially, the industry services representative is responsible for making regular visits to existing area companies and for marketing Special Schools services to new or expanding industry. He also brings together vital college, company, and (where appropriate) community representatives to discuss customized training and make plans to deliver it. He then coordinates all elements of college-company cooperation throughout the customized program, if it is a Special Schools program. If it is not a Special Schools program, the industry services representative may make the contacts and set up and participate in the meetings, but all functions beyond that point are the responsibility of the dean of adult and continuing education (noncredit courses) or the dean of instruction (courses for college credit).

The College president often accompanies the industry services representative on visits to prospective employers. He also serves in the role of facilitator whenever extra effort is needed to get an upgrading or retraining program off the ground. Both the president and the industry services representative communicate clearly that Tri-County staff understand the free enterprise system, the necessity of company profit, and the critical role that technical education can fill in boosting company productivity and competitiveness.

The dean of adult and continuing education and the dean of instruction also meet with companies and with community agencies and organizations, and communicate what their Divisions can deliver through occupational advancement training. They keep their "ears to the ground" to note occupational and skills-need trends, and to keep up to date on advanced technologies that relate to technical training at the College. Both deans focus on updating existing regular courses and programs within their Divisions, and on developing new courses and programs to extend their Divisions' services. Both Divisions also deliver customized upgrading and retraining courses.

Businesses and industries in the Tri-County area have various liaisons with the College, through contacts with the industry services representative and other visitors from the College and through company staff's participation on advisory boards and committees for the various College programs. Some company staff members also teach part-time at the College in their areas of specialty, on their own time.

Program Design and Delivery

Customized training delivered by Tri-County begins when contact with a new or existing company in the Tri-County area results in a request by that company for tailor-made technical training. Such training may be for preemployment (as in start-up training through Special Schools), or for upgrading or retraining of current employees. It may involve classroom learning and lab or other simulation experiences delivered on campus, at a specially prepared site in the community, or at the plant site; or, it may involve on-the-job training. It may be for credit, though more often it is not. Because it is customized, it is always focused on the specific needs of a specific company, and in many cases the processes and technologies that are taught are proprietary to that company and the equipment is highly specialized.

Noncustomized upgrading and retraining are provided to the community at large through regular courses or courses requested by the community through community service coordinators of the College or other College-community liaisons. Such courses may be noncredit or for college credit, and may be delivered on campus or at special but permanent off-campus sites (such as Easley High School).

Whereas the Continuing Education Division does deliver noncredit courses for personal enrichment that do not involve occupational advancement, the courses being discussed here are those directed toward occupational advancement. These courses meet job-related needs of workers in the community.

Noncustomized occupational advancement courses at Tri-County are added or upgraded as the College perceives employment and technology trends developing in the community. Not infrequently, courses developed for one or a few specific companies that adopt new technologies are later modified to have a more generic application, and are then offered to the community at large or are incorporated into degree programs as those technologies receive wider use in the area or industry.

Needs Assessments for Upgrading and Retraining

As has been mentioned, noncustomized training programs are upgraded or added as community or occupational needs are identified. The College uses information and feedback from the industry services representative, community service coordinators, state and community agencies, industry personnel serving on College program advisory committees, other faculty contacts with the private sector, research from the educational community, and many other formal and informal sources. Tri-County also adds program areas under special stimulus, as when the American Council on Education selected the College as one of its pilot sites to establish its new Management Development Division.

Needs assessment for customized training programs is generally an informal procedure, in which College representatives (including a faculty member with related technical expertise) consult with company representatives to determine what the training needs are. Company staff involved in such assessments frequently include personnel managers, training directors, supervisory personnel at existing plants, company engineers, and so forth. These company staff members provide job descriptions and other information pertinent to designing a training program that will develop the specific skills needed.

College representatives also frequently make site visits to observe the operations of similar plants or the use of the same or equivalent technologies or processes, in order to clarify the content of the proposed training. The course content is tailored to the company's needs, and at every stage the company is consulted for accuracy. Tri-County representatives perform no needs assessments using formalized instruments.

Training Agreements for Customized Programs

For noncustomized courses, there are no agreements needed with companies or agencies. For continuing education courses, all that is required is a minimum enrollment of ten persons. For credit-granting courses or programs leading to associate degrees or diplomas, approval must be obtained from the State Board for Technical and Comprehensive Education.

For customized courses, there are no contracts signed with companies. At most, a letter of understanding is drafted. For Special Schools training, a company must guarantee to create at least twenty new jobs. Customized training that upgrades the skills of or retrains existing employees does not qualify for Special Schools funding, though some training expenses are absorbed by the College. In these cases, the College tries to make customized training as inexpensive and as readily available to area companies as possible. Even so, for a customized program to be cost-effective, a company must have a minimum of twelve students. For such programs, companies pay the College directly.

Whether for Special Schools or other kinds of customized training programs, informal training agreements stipulate such program criteria as content of training, number of trainees, source of trainees, scheduling and duration of training, standards of student performance, funding, recruitment and selection of instructors, development of training materials, training site and facilities, and generally who will be responsible for what activity at what stage of the training effort.

Course Development

For noncustomized programs, upgrading and retraining courses generally are developed by College faculty, with input from the department advisory committee and use of other available resources. Some new noncustomized courses are adaptations of customized courses.

Customized courses may be developed in a variety of ways. In some cases, companies already have their own training programs for analogous workers at other plant sites, and Tri-County uses or adapts these existing materials. In some cases (as with NCR), the company assigns its own staff to develop the course outline and (often) the course materials for some or all of the program, although the training is still delivered by the College. Frequently the College already has a course or program operating as part of the regular curricula that can be revised or added to in order to meet company needs. When neither company courses nor existing College courses can be adapted, the College assigns a faculty member with appropriate expertise to design the new course. When such an expert is not available on campus, the College will find and pay an outside expert—usually a qualified person in the community—to develop the course. The maximum payment is usually $100.

Materials development. The materials for a course are generally handled in much the same way as development of the course itself. In noncustomized training, course materials may be developed by College faculty, by members of the department advisory committee or other consultants, by volunteer community members (as in the case of courses set up, upon community request, by the community service representatives), or by outside organizations or agencies (such as the pilot program being used by the Management Development Division).

In customized courses, course materials may be developed by the company (often by company training staff, engineering staff, or other expert personnel working for the company), by the College faculty, or by outside consultants. At times, an outside instructor who is hired part-time by the College to teach a very specialized, high-technology customized course will also develop the course and/or the course materials, but more often the course materials are developed by the College staff or by company and the College staff members working together. Once the materials are drafted, the College's own Learning Resources Center takes care of all graphics and printing and provides as many copies as are needed for the program.

Some customized courses have made extensive and successful use of audiovisual instructional materials, including slides, slide-tapes, and videotapes. The College has sent out qualified media staff on a number of occasions to various company sites (often in other states) to videotape production processes for later use in customized instruction. Tri-County's Learning Resources Center is staffed to produce such media, though the majority of such support services are provided directly by TEC's own production center.

Selection of instructional modes. Tri-County faculty members are well gounded in effective modes of instruction for teaching adults. Most courses make use of a variety of instructional modes, including innovative techniques such as simulations, instructional videotapes, on-site practical experiences, and so forth. For customized courses, instructional modes need to be particularly flexible to meet unpredicted shifts in instructional focus, or significant variations in individual trainees' skill levels. In situations where the instructors are not regular Tri-County faculty members, College representatives monitor the classes on an ongoing basis to watch for such needed changes in instructional mode.

Course Approval

For any courses taught for credit, official approval must be granted by the State Board of Technical and Comprehensive Education. For noncredit courses, advisory committees and departments are responsible for approving courses and course content.

In the case of noncredit customized training, companies have the last word on course and course content, and approval is in their hands. Usually, the College and the company work so closely together in designing customized programs that no formal approval process is necessary. In some cases, courses must be redesigned in progress, simply because the training area is so new or the relevance of the trainees' existing skills so unpredictable that it is impossible to finalize the course content beforehand. Flexibility is a necessity. Again, in such cases, company and College generally work so closely together that course adaptations are accomplished as needed without any problems.

Funding and Budget

Noncustomized courses that grant credit are partly paid for through student tuitions, and partly through TEC. Noncustomized continuing education courses for occupational advancement are counted as continuing education units (CEUs), which may be refunded in part (according to a TEC System formula) to the College by the TEC System.

Special Schools programs for preemployment training are funded by the TEC System, and are available free of charge to new or expanding companies creating a minimum of twenty new jobs. In those cases where the programs must rely on company staff to teach the customized course, TEC reimburses the company a negotiated amount of money toward the salaries of such instructors for the hours they spend instructing.

Funds for Tri-County's Special Schools programs are administered by the TEC System's board of trustees. The local counties are responsible for setting up any necessary facilities in the community, if campus or company plant facilities are inadequate or unavailable. Equipment, equipment installation and maintenance, instructional materials, hand tools, and materials are all paid for by TEC.

For other customized upgrading and retraining programs, the company pays for all or most of the training costs and must provide a minimum of twelve trainees for the College to be able to deliver the training (break-even point for the College). Because the College wants companies to make use of the services, it absorbs some of the costs for all such programs, charging companies a flat rate.

Some companies have tuition reimbursement programs for their employees to pursue upgrading courses (related to company skills needs, in most cases) on their own time. In effect, this is company-sponsored upgrading, whether the employees take regular, noncustomized courses for credit or not.

Recruitment/Selection of Trainees

Trainees for noncustomized courses are self-selected for the most part; that is, students find out about courses or programs on their own, and attend them on their own time for their personal occupational advancement. Continuing education courses have few if any prerequisites,

so access to such upgrading or retraining opportunities is generally unrestricted. In credit courses, such as noncustomized upgrading and retraining courses that are part of a degree or diploma program, students must meet four-year college entrance requirements and/or have education or experience equivalent to the stipulated prerequisites for credit courses.

Recruitment and selection procedures for trainees for customized programs vary from one situation to the next. For preemployment training through the Special Schools, the criteria for selection are set by the company. The College then announces the start-up training. Often the College works through Job Services agencies or the local Employment Security Commission to reach persons interested in and qualified to take the start-up training. Such candidates for training are pretested (frequently by one of the two outside agencies) and preselected by the College.

In Special Schools programs, trainees are usually employed elsewhere at the time of the training, which is held at hours convenient to the trainees. These persons have no guarantee from either the College or the company that the successful completion of the training program will garner them a new job. Trainees do not have to pay anything for the training, and take the risk of not being hired for the chance to better their worklife and earnings. The pretesting and preselection procedures used by the College, coupled with the motivation of the trainees, have proved highly successful, with very low dropout rates in the customized courses, and few if any "washouts" or turnover from trainees subsequently hired by the companies. This contrasts with many companies' previous experiences with attempting to "hire off the street"—resulting, for some firms, in as high as 150 percent turnover in a year!

For customized courses that are not Special Schools programs, the trainees are already employees of the company requesting the customized training. In most cases, the trainees are selected by the company, though employees may also volunteer to take the courses in some companies. The College may pretest some employees for required skills, but more often the pretests are given to point up areas where remedial course modules may need to be added to the customized course rather than to reject employee trainees.

Selection of Instructors

Both credit and noncredit courses that are offered by the Continuing Education Division require instructors with wide-ranging expertise in technical and related subject areas. About 47 percent of Tri-County's faculty members are part-timers, and instructors from local companies are recruited from the community to teach. Tri-County is fortunate to be in a burgeoning retirement area, and many of its part-time instructors are retirees with exceptional experience upon which to draw for teaching.

For customized courses, the College first looks to its own faculty to find appropriate instructors. In cases where instructors with the needed expertise are not available, the College then turns to the community or to the company itself. For courses that teach proprietary processes or use highly specialized equipment or technologies, it is often impossible to find qualified instructors anywhere but within the company. Both College and company must agree on the selection of instructors for customized courses.

Instructor preparation and upgrading. Full- and part-time faculty members teaching noncustomized courses receive a variety of opportunities to develop and upgrade their technical and teaching skills through the College. For example, the English Department has established a buddy system in which full-time faculty work closely with part-time instructors to review tests,

relay paper-grading policies, and answer questions. Other departments invite part-time faculty to departmental meetings, as well as schedule special meetings at the beginning of each quarter and arrange for part-time instructors to visit and observe classes.

Division and departmental chairpersons routinely survey part-time faculty to determine their needs. On the technical end, both full-time and part-time teachers are encouraged by the College to work in industry in their specialty areas in order to keep up to date on processes and technologies.

Instructors recruited from the community or from a company for customized courses take the College's Job Instruction course prior to teaching the customized course. The Job Instruction course instructs those whose teaching experiences have been limited and orients them to methods for the instruction of adults and to the policies and procedures of the College that relate to customized instruction.

Scheduling

For customized courses, the company and College negotiate on development time, time for selection and screening of training (for Special Schools), preparation of training facilities, orientation of instructors, procurement and installation of any needed equipment, and so forth. In Special Schools training programs, schedules are usually designed "backwards"—that is, a date is pinpointed that is about two weeks prior to the date the company will actually need the newly trained workers to begin working. That date becomes the final day of training, and instructional time, course preparation time, and preemployment recruiting and selection time are all determined by counting backwards from that date, according to estimates of how long each of these activities will take. Times at which classes are actually taught are made as flexible as possible for the convenience of trainees and companies.

Facilities, Equipment, Tools, and Materials

Noncustomized courses generally take place on campus or at designated community facilities already set up for instruction. Equipment and tools are provided by the College or donated by local companies. In some courses, students must provide their own equipment or tools—usually the fairly inexpensive ones.

Customized courses may take place on campus, at designated or specially prepared community facilities, or at the plant site itself. Special Schools programs are unique in that if appropriate facilities are not already available at the College or the plant the TEC System (through the local county councils) finances the construction or refurbishment of a community facility in which to house the training program. Refurbishment may include the installation of cooling, heating, electrical, and sanitation systems. TEC also installs and maintains any necessary furnishings and equipment for the training.

Special Schools programs provide all equipment and tools (where possible) and all materials for start-up programs. In cases where equipment or materials are not available through the TEC System, or where they are highly specialized for that specific company, the company itself is asked to lend the equipment or materials.

In customized training for upgrading and retraining (non-Special Schools), instruction most often takes place at the plant site. Equipment used there is frequently the company's, borrowed

for the duration or used in off-production hours. If the training is given on campus, and if the College has appropriate equipment or can borrow it from elsewhere in the TEC System, the school will provide the equipment.

Evaluation of Courses or Programs

Formative evaluation and course modification. Company liaisons often monitor ongoing customized training courses, and convey their perceptions and company wishes to the course instructors or to the College liaison. In all customized courses, instructors administer intermittent questionnaires to trainees to gauge the trainees' reactions to programs. Combined with competency-based tests or evaluations conducted throughout the course, this information guides instructors in modifying the course design or instructional modes as needed. Many customized courses are individualized, and instructors use these interim evaluations to add additional practice or remediation for students having problems with the materials, or to advance some students at a pace more suited to their skills.

Summative evaluations. Students taking any course for credit or certification must pass competency-based evaluations at the conclusion of the course. In customized courses, whether for credit or not, competency-based evaluations or tests are also administered. Sometimes companies also administer their own tests or questionnaires.

The College pays close attention to the variations in overall outcomes of customized courses, so that future courses in the same or similar skill areas may be refined accordingly. This is also important for customized courses in new technology areas that may eventually become more widely adopted in other businesses. The College takes such customized courses and revises them for continuing education offerings or includes them in degree programs where appropriate.

Short Courses

Tri-County, in its continuing efforts to be responsive to industry as well as individual needs for occupational advancement training, offers a variety of short courses, seminars, and workshops on topics of general interest. These include, for example, upgrading seminars in advanced management and supervisory techniques. The courses or seminars are frequently designed to be taken "on the road"--that is, to be held in the community or at places of business upon request. More than a hundred such short courses are given each year throughout the Tri-County service area.

Companies occasionally request not only that short courses be given at the company site, but also that they be tailored to their specific needs. This most frequently happens when a company introduces new equipment, procedures, or new technology that is closely related to what was used previously, so that some orientation is needed, but an entire course is not necessary.

SUMMARY

Key Factors in Upgrading and Retraining

The TEC System

The key factors that make South Carolina's technical upgrading and retraining efforts successful consist both of "hard" programmatic elements and "soft," less definable—and perhaps less prescriptive—ones. Obviously, among the more concrete factors at the state level are the TEC System's free, customized start-up training programs (Special Schools) and its innovative Technical Resource Centers created to keep the System's colleges up to date with advancing technologies. Few states have established such a clearly directed and effectively organized and funded postsecondary technical education system for providing service in economic development efforts. The fact that technical education is a distinct *priority* in the state has a profound effect—in terms of funding, support services, and public relations/marketing—on the ability of member colleges, such as Tri-County, to deliver effective upgrading and retraining for adult workers.

Good cooperation and articulation among the colleges and community and state agencies in marketing and supporting customized training are important aspects of the TEC System's commitment. The South Carolina State Board of Economic Development and the local planning and development boards bring visiting prospective employers and college representatives into direct contact to "sell" technical training services—both customized and noncustomized—as part of the state's economic development thrust. *All partners* in such cooperative efforts are treated as equal partners, allowing for much productive give and take, and no one is allowed to dominate. This cooperative outlook is a cornerstone of South Carolina's upgrading and retraining program policies.

Vital to good cooperation is good communication. Colleges, agencies, and companies cooperate in an atmosphere—promoted by the colleges—of mutual interest and appreciation. Participants in upgrading and retraining efforts listen to each other. The TEC colleges make a point of including many local business and industry representatives on their departmental advisory committees, so that the colleges and companies truly learn about each other's needs. The industry services representatives work with new and existing companies and make regular contacts to stir up interest and make the case for customized and regular technical training through TEC.

Flexibility is a watchword for the TEC System training programs. The bottom line for the TEC colleges is service to the public and to South Carolina's existing and prospective companies. There are very few hard and fast rules to which a college must adhere, and many policies are more like guidelines, with their interpretation being the responsibility of the college presidents and TEC area commissions. Colleges develop and deliver upgrading and retraining to fit the needs of the trainees and of companies. As Larry Earwood of the Singer Company has said, the college representatives "have flexibility with our needs; in fact, I can't think of any instance where we have not been able to work out together a solution to our needs."*

Another key to success is the TEC colleges' commitment to serve South Carolina companies once the companies become established. As the president of Tri-County puts it, "The College does everything it can to attract new industry, but it is equally important to be responsive to

*Personal interview with Larry Earwood, Vice-President for Industrial Relations, Singer Company, 8 June 1982.

existing industry."* Degree- and diploma-granting programs, as well as continuing education and customized courses, are all designed with long-range industry employment needs in mind, and are upgraded accordingly.

TEC colleges make the best possible use of all their resources and expertise within the TEC System. The colleges' expertise in recruiting qualified trainees for customized start-up training programs (including pretesting and screening, often performed in cooperation with the local Employment Security Commission offices) is a major plus in TEC's Special Schools training. A very large part of making customized training work is in planning the program with the company, well in advance, and specifying what party is responsible for what task at what point. TEC System colleges' twenty years of experience make this process easy and straightforward. The colleges' experience in other aspects of adult education—such as using a variety of instructional methods to maintain high interest level in adult trainees—also enables trainees to make the most of the courses.

Tri-County Technical College

It is not always clear whether the key elements of successful upgrading and retraining programs extend from aspects of the state's TEC System policies and practices, or whether they extend from aspects that are unique to Tri-County. This case study has focused on that one college of the TEC System, and none of the others were visited, thereby perhaps biasing a report of what makes the TEC System successful as opposed to what makes Tri-County successful. Certainly the fact that the Tri-County service area consists mainly of small cities, towns, and rural communities has allowed the College to create many ties with people in the area, resulting in a different—perhaps even better—communications system than might be found in a more urban area. In addition, the quality of life in the Tri-County area is good: There is scenic countryside; a favorable climate; a respectable level of cultural activities (many facilitated by the College); good transportation and land quality; and what Richard Fralick, executive director of the Pickens County Planning Commission, calls "a profit for pleasure" atmosphere that makes the area particularly attractive to employers and employees alike. This situation is not true of all other parts of South Carolina. Too, Tri-County has been in existence for over twenty years, with essentially the same mission; other, younger and less well-established colleges in the TEC System do not have such advantages.

The Tri-County staff in general reflects the kind of deep-seated commitment to economic development that is promoted by TEC, but it is uncertain whether many of the other fifteen TEC colleges carry that commitment with as much fervor as does the Tri-County staff. Tri-County staff *expect* to work "above and beyond the call of duty," and the College's emphasis on accommodating students' and companies' needs is, according to Tri-County's director of CETA training programs, "our bottom line."* College staff members are expected to "think like business people" in order to understand the needs of industry and how those needs tie into community economic development and technical training programs.

Tri-County staff members are selected (especially in the Continuing Education Division) partly on the basis of their being "self-starters." The dedication of instructors, particularly, is estimated to improve efficiency of training programs by as much as 30 percent. All divisions of the College are geared to provide upgrading and retraining, and all support customized training within their service area. Cooperation is emphasized and allows for much internal flexibility. The

*Personal interview with Don Garrison, President, Tri-County Technical College, 7 June 1982.

*Personal interview with Ron Talley, Director, CETA, Tri-County Technical College, 9 June 1982.

Special Schools programs, having been a daily part of Tri-County since its founding, are a way of life at the College.

Internal coordination is excellent. Within the administration, top management staff members can and frequently do step in for other staff when needed for marketing, planning, or coordinating of customized and other training activities. The staff members rely on making personal calls to outside agencies, organizations, or companies, rather than on telephone calls. This practice, while time consuming, enormously facilitates communication and cooperation.

Tri-County's industry services representative and the College president have dealt with so many prospective companies that they know before they go into a meeting with company representatives what questions are likely to be asked and what information the visitors will want. The Tri-County people also know exactly who to call together to accomplish different kinds of planning and coordination for training programs. Getting the right people together to do the job is a critical factor in a program's success.

Tri-County's customized courses have a number of unique elements. There are no written contracts for customized training, though there may be a letter of understanding exchanged between a company and the College. The reason given for this lack of formality is that the College and the companies have superb communications and know each other so well that no formal, legal arrangements are necessary.

In customized training, the College generally performs (or arranges with the Employment Services Commission to perform) pretests of trainees before an actual course begins. This pretesting—sometimes involving skills verification—determines the strengths and weaknesses of the individual trainees, based on their previous related experience or training. This evaluation allows individualization of the training and tailoring of the course content to build on trainees' known strengths and to boost their weak areas, as needed.

Customized training offered by Tri-County also has comprehensive elements. For example, the College routinely includes a brief mathematics segment in its customized courses, even if math is not necessary to the job for which the course is training. It has been Tri-County's experience that boosting trainees' math competencies—even if only as a refresher course—gives them a real sense of achievement and self-confidence, and helps in the rest of the training as well.

Customized courses include extensive use of interim student questionnaires that allow instructors to gauge the progress of the course as a whole, and to make needed modifications to content or instructional methodology or materials. These interim questionaires, which must be signed by each student, also help instructors to gauge trainees' individual progress and to prescribe remediation, more practice, or whatever is appropriate to aid trainees in progressing at their own individual pace.

Tri-County does its utmost to remain as responsive as possible to the needs of companies and trainees, before and during customized instruction. Tri-County currently is putting all its instructional modules onto word processor disks, so that the College can store, modify, and print out the modules for any related customized programs as they are needed. This is expected to streamline course development or modification for customized training courses.

Overall Success of Tri-County's Approach

Tri-County and the TEC system have weathered their share of problems and criticisms. One criticism has been that the TEC System and South Carolina's entire approach to economic development promote an anti-union climate along with its pro-business climate.

Another criticism of the TEC System has been that it is part of South Carolina's attempt to "buy" industries away from other states. TEC and Tri-County counter this accusation, pointing out that school taxes created by the existence of a new business pay for the costs of Special Schools training within a year. They insist that TEC's approach is an intelligent investment in job creation and economic development, while admitting that competition among states to attract new business is a hard reality. "It's an all-out war as everybody struggles to keep taxes down, meet mounting demands of the public for services, and survive double-digit inflation" (Tri-County Technical College 1981, p. 2). Furthermore, South Carolina claims that it does not offer anything "free" to incoming businesses except the Special Schools training.

Some parties have implied that the TEC System promises a great deal more in its public relations materials than it delivers through its training. The information collected through this case study, as well as from the literature review, does not support that accusation. It is true that not all graduates of Special Schools programs are necessarily hired by the companies requesting the training, but the vast majority of them are hired, and companies claim that all would be hired were the economy healthier.

It is not clear at this time just how effective the Innovative Technical Resource Centers will be in delivering all they have promised, as those Centers are only "getting on their feet." The Microelectronics Resource Center at Tri-County has collected an impressive array of advisors, however, and gives every appearance of being able to deliver on its promises within the next few years.

A criticism of customized start-up training is that colleges prepare such trainees to work in minimum wage, dead-end jobs with no career paths and limited employment expectancy. This is not so at Tri-County, where those who are underemployed are specific targets for customized as well as noncustomized continuing education. A majority of the persons recruited for start-up training at Tri-County are already working elsewhere—often in those aforementioned low wage, dead-end jobs—and take the customized courses in order to improve their wages and the quality of their worklife.

The successes that Tri-County has had in providing upgrading and retraining for adult workers may be gauged in a variety of ways. The testimony of company representatives who have worked with Tri-County in customizing courses is evidence that industry is vastly satisfied with the outcomes of the training and with the close communication and cooperation with the College. Not only do workers who are custom trained by Tri-County meet skills specifications, but they also show exceptional interest in their jobs and loyalty to their employers. When Tri-County trained 300 new workers for start-up by Stauffer Chemical, turnover of the new employees was only 1 percent after a year. When the company attempted to hire 100 employees "off the street" without the customized training, turnover after a year was 150 percent. Companies also cite major differences in the productivity of Tri-County trainees over that of employees hired "off the street" or trained by the companies themselves.

Tri-County contributes in a major way to the economic development of its service area. Special Schools have trained well over five thousand workers in the three counties since 1962. During school year 1980-1981, 1,865 new jobs were created in the three counties, most of them

as a result—at least in part—of training available through Tri-County (Tri-County Technical College 1981, p. 7). The new jobs created in that year are estimated to have brought in $18 million in additional bank deposits, $3.2 million in retail sales per year, $39.6 million in increased personal income, and to have created 1,224 additional nonmanufacturing jobs, 19 new retail establishments, and 1,746 additional households (ibid.). The CETA program at Tri-County that same year trained 200 workers and added an estimated $500,000 to the local economy. The College also trained a total of 8,573 students in occupational advancement courses that year, including both customized and noncustomized courses.

OVERVIEW OF COLLEGE AND SETTING

Macomb Community College lies just to the north of Detroit and is strongly affected by the economic forces that impact on the Detroit metropolitan area. The College district is composed of Macomb County, an area of 481 square miles that includes twelve home rule cities, three villages, and twelve townships. It is a comprehensive, multicampus, two-year public institution, founded by the citizens of Macomb County in 1954. The main campus is in Warren and another campus is located between Mt. Clemens and Utica. As the only institution of higher education in the county and Michigan's largest community college, it has an enrollment of over thirty thousand students.

Residential, commercial, and industrial development has expanded Macomb County's assessed valuation to over $6.5 billion, its population to about six hundred ninety-two thousand, and its employment population to about two hundred fifty thousand. It is a highly industrialized county with slightly over 38 percent of its employment concentrated in manufacturing. Each of the three largest automobile companies (General Motors, Ford, and Chrysler) have major installations here. The county also houses the new production facility of Volkswagen of America, as well as the Chrysler Defense operation owned by General Dynamics Corporation. The county is also the home of the giant General Motors Technical Complex, several large machine equipment manufacturing companies (including Lab Technicon and the Cross Manufacturing Company), as well as hundreds of job shops.

Of the counties around metropolitan Detroit, Macomb is the one most closely tied to the automobile industry. Currently, this has created a very high unemployment rate, which has had a profound effect upon the people and the economy of the area.

More students now enroll in the College's ninety occupational programs than in the liberal arts transfer curriculum. The College has a long tradition of serving the needs of the business, health, and industrial communities. Its records show that it now serves an employer base of over six hundred, which includes providing related instruction to forty different trade areas for sixteen hundred apprentices.

Macomb provides retraining for many displaced employees. For instance, in school year 1980-1981 the College enrolled over twelve hundred students who were sponsored by the Trade Readjustment Act. It also regularly provides CETA training programs in the technology and health areas.

A current thrust is developing programs for retraining and upgrading of current employees, adding to the pool of skilled human resources so important to increased productivity. Macomb has responded to the need for lifelong educational services.

A close working relationship with the community is maintained through a variety of structured interactions, including apprentice programs, cooperative internships, advisory committees, a large adjunct faculty drawn from local businesses and industrial concerns, and a standing offer to tailor instruction and services to meet specific employer needs.

OVERVIEW OF STRUCTURES FOR EDUCATION AND ECONOMIC DEVELOPMENT

State-Level Structures

State Community College Structure

Michigan's system of community colleges was established to provide adults of the state with quality two-year postsecondary educational services within commuting distance. The first public two-year college was established in Grand Rapids in 1914, and the system has grown to twenty-nine community colleges today. In 1967 the Michigan State Board of Education endorsed the job-training mission of community colleges by designating them as "postsecondary area vocational education centers" eligible for federal vocational education funds.

The community colleges are governed locally by an elected board of trustees. Statewide there is a Michigan State Board for Public Community and Junior Colleges which is advisory to the State Board of Education on matters concerning the continued growth and development of the total system of community colleges. The state provides leadership and counsel, but does not mandate what the colleges should do.

State Economic Development Organization

There are a number of offices in state government that were created to serve the state's economic development needs. Lead units are the Offices of Community Development and Economic Development in the Michigan Department of Commerce. The Department of Labor houses the funds for start-up training and retraining to attract new industry and help present industry to stay and/or expand. Also in the Department of Labor is the Michigan Employment and Security Commission. The Michigan Business and Industrial Training Act prescribes the powers and duties of these two departments in this regard. Special officials in the governor's office are also involved in economic development. Three-fourths of the funds to provide training and retraining are state general funds, and one-fourth are discretionary funds out of the governor's office, such as CETA funds. The State Department of Education has limited federal vocational education funds for projects to upgrade and retrain of workers. There is a strong emphasis on retaining industry by retraining workers. Currently there is not a coordinator to draw together these various efforts from the different units.

Legislation authorizes the formation of local Economic Development Corporations by communities for the purpose of attracting new industry. This legislation authorizes these units to issue tax benefit inducements.

The Michigan Community College Presidents' Committee on Economic Development, in cooperation with the Michigan Community College Association, developed a *Policy Statement on the Role of Michigan Community Colleges in Economic Development*. Published in 1981, the document makes the following five proposals:

1. Michigan's twenty-nine community colleges should be designated the primary delivery system for job training and upgrading in support of economic development efforts. As the primary statewide network for job training in support of economic development, community colleges have a key role in these areas: job development, quick-start programs, degree and certificate programs, continuing education (to upgrade job skills), and needs analysis and planning.

2. An ongoing statewide network for economic development and job training should be established that consists of the twenty-nine community colleges. Economic development specialists should be employed at each college to serve community economic development needs and provide a local tie to state-level economic development activities.

3. Coordination of state-level economic development efforts should be encouraged. To implement this goal, a Council for Economic Development should be established. The Council would consist of the governor, the directors of the Departments of Commerce and Labor, the superintendent of public instruction, and the director of the Michigan Employment Security Commission.

4. Property and business tax relief and tax abatement proposals should recognize economic development needs. While property tax relief and tax abatement may assist individuals and the business community initially, too severe a reduction in tax revenues would impair the ability of educational institutions and state departments to implement a successful economic development plan.

5. A comprehensive economic development plan should recognize and integrate the programs of the total educational system in Michigan.

Institutional Structure

Macomb College is governed by a Board of Trustees elected from its district, which is Macomb County. The *Official Guidelines* of the College state that "Macomb Community College is an open-door educational institution committed to provide higher education to all who can benefit" (p. 1). Its educational evolution parallels that of other community colleges in Michigan. A publication that Macomb College (1981) prepared, "What Employers Increasingly Need . . . Michigan's 29 Community Colleges," describes the evolution of the community colleges in the state from transfer institutions to comprehensive two-year colleges in which the majority of students are enrolled in occupational programs. It states that these adaptations have occurred because of demand from local business and industry, and that in Michigan community colleges have adjusted their course offerings to the economic environment. It describes the colleges as responsive to problems such as those of the structurally unemployed, and states that the colleges operate on the knowledge that retraining is a fact of life for modern workers as old jobs disappear and new jobs are developed.

Organization of the College

Many persons at Macomb Community College described the College's president, Albert Lorenzo, as "the best resource the College has." He is an articulate, creative, and inspiring leader. He is served by an executive assistant to the president and four vice-presidents (see figure 9). The two vice-presidential positions that are most involved in educational services for industry are the academic vice-president and the vice-president for student and community services. The vice-president for planning and development administers study, research, planning, and evaluation activities related to economic development.

Under the academic vice-president, the two deans most involved with upgrading and retraining services are the dean for technical education and the dean for business/public service. These persons have several associate deans reporting to them.

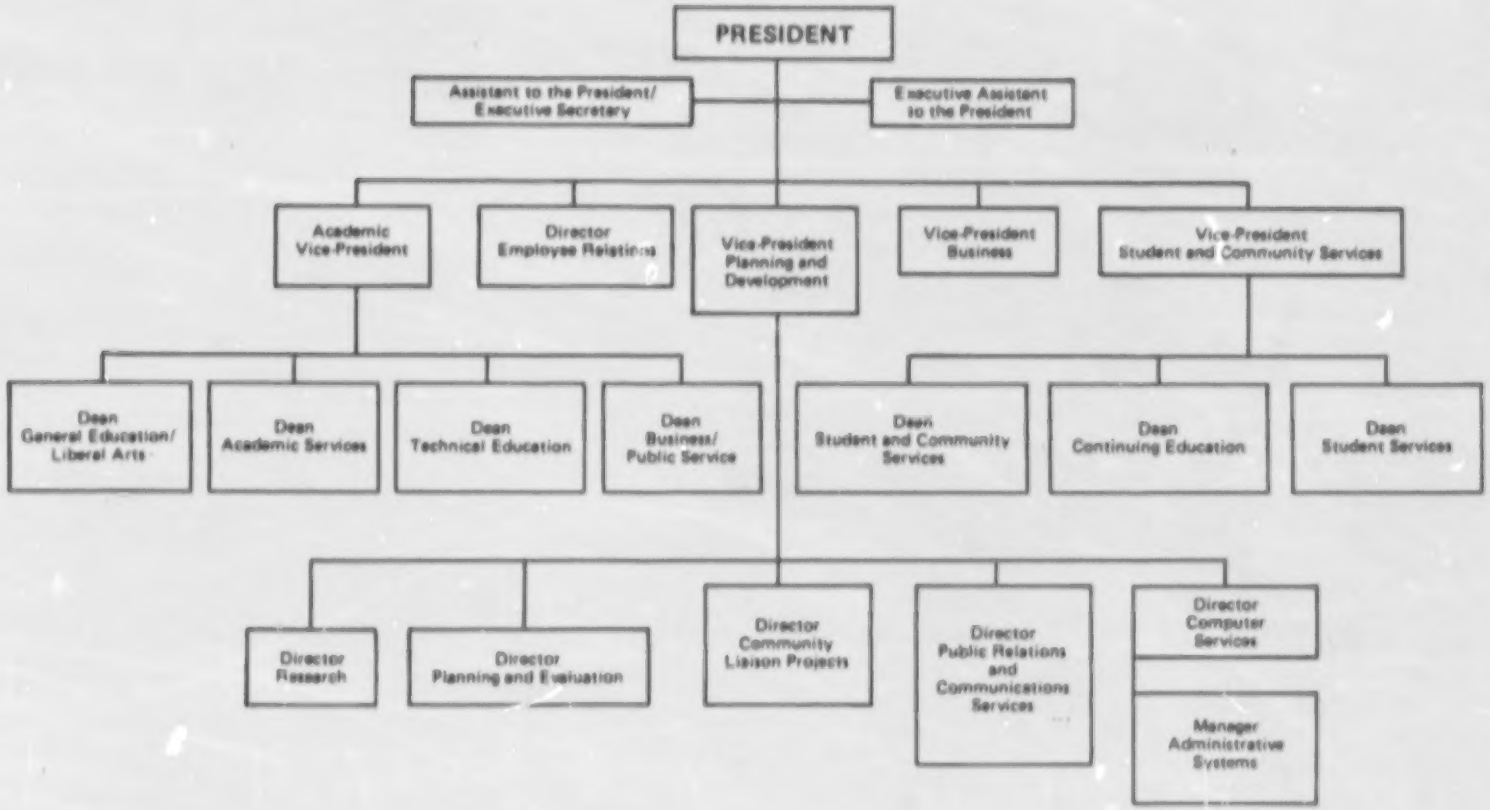


Figure 9. Organizational Structure of Macomb Community College

The continuing education and community services functions are under the vice-president for student and community services. The three deans reporting to this person are the dean of student and community services, dean of continuing education, and the dean of student services. It is under this vice-president that the responsibilities are located for the Center for Community Studies, the Small Business Institute, and counseling and placement services related to retraining active and unemployed workers.

These are the key members of the administrative team that is committed to making Macomb College a leader in marshalling community resources to address needs in the areas of unemployment, upgrading and retraining, and economic development.

Funding for the College

The College is financed by three major sources. First, it receives funds from the state as a member of the statewide network of community colleges. Second, it receives revenue from a one mill property tax in its district. Third, student tuition and fees are another significant source of income. A small percentage of funds come from various other sources.

The decline of economic conditions in the state has changed the percent of funds received from the different major funding sources. This becomes clear in comparing the funding in school year 1981-1982 with that of 1979-1980 as set forth in the following:

	1981–82	1979–80
State Funds	39.1%	48.6%
Tuition and Fees	35.2%	27.1%
Property Tax (1 mill)	20.8%	19.7%
Other	4.9%	4.6%

Figure 10. Funding for Macomb Community College

With the severe recession and high unemployment in the state during 1981-1982, state funds available for community colleges were reduced and student tuition and fees had to make up the difference.

Distinctive Features of the College

The president of the College has provided strong leadership in using the resources of the College to contribute to the economic development needs of the community. With the strong constraints upon funds for education in these depressed economic times, he has skillfully involved the College and has used the expertise therein without incurring any significant additional costs to the institution.

The College has served as a catalyst to mobilize the appropriate persons, organizations, and agencies in the community to address the serious unemployment situation in the area and to plan for economic development. This was done through the College's Task Team on Economic Development, its Center for Community Studies, its Economic Development Workshops, its special training programs, its community surveys, its preparation of education and publicity

materials, and its provision technical assistance. These various programs and activities are described in detail in later sections of this case study.

The College has also assumed a leadership position in the state community college system in preparing materials on community college roles in economic development, in conducting workshops, in coordinating joint efforts with other colleges, and in developing high-technology programs.

The president has been the key person in identifying area needs and opportunities, making the contacts and proposals, and mobilizing his staff to respond. Two noteworthy examples are Macomb College's major involvement in the (1) Ford-UAW (United Auto Workers) National Development and Training Center to provide counseling, training, and placement services for both active and unemployed workers and (2) the start-up training provided for Volkswagen of America.

College Structure for Economic Development

When an opportunity for leadership, contribution, and involvement in economic development activity occurs, Macomb's president (in consultation with his key administrators) creates new structures and selects staff from within the organization who have the needed expertise to do the job. This approach enables the president to utilize resources anywhere within the College to accomplish the objective of the activity. Other staff persons then fill in for the person drawn out for the special assignment. This provides interesting and stimulating new experiences for the persons involved. It also enables the College to provide this kind of community leadership when funds are not available for new areas of outreach and service. It is hoped that in time outside funding can be obtained to conduct such activities.

Task Team on Economic Development

Eight College administrators and faculty members with business, industrial, and community experience were asked by the president to focus their talents and the resources of the College on the economic restoration and development of the Macomb area. The group devised plans for greater College participation in area economic development activities, in planning and training for new and expanding industries, in presentations to and workshops for community economic development groups, and in providing consulting services to such organizations. One of the objectives was to encourage and facilitate cooperative efforts countywide.

To date, the Task Team on Economic Development has undertaken three major efforts. The first was a survey of Macomb County residents to determine their concerns. This public opinion survey gathered information on (1) what residents would be willing to sacrifice to obtain economic development, (2) support for a variety of proposals for economic development generated by the governor, (3) the image of the College in the eyes of the community, and (4) whether the community would like the College to become more directly involved in economic development issues.

Employment and job security were the major concerns expressed by the respondents, who also indicated that governmental agencies should lead economic development efforts and that these efforts should be conducted on a cooperative regional basis. The study revealed that the majority of Macomb citizens have a highly favorable image of the College, and that they want the College to play a more vigorous role in the economic development of Macomb County.

The second undertaking of the Task Team on Economic Development was an economic development workshop for city and township officials and members of local Economic Development Corporations. Officials of the Michigan Offices of Community Development and of Economic Development brought participants up to date on what the state was doing to help in this area, on related legislation, and on coordinating efforts with each other and with the state. One of the College's professors gave an economic analysis of the county and suggested the most productive directions to be taken for the future, given the county's resources of manufacturing facilities and skilled workers. Participants left the workshop with a strong awareness of the need for cooperative activity among the many organizations within Macomb County. The Task Team is planning additional meetings to facilitate such cooperation.

The third effort was a breakfast meeting attended by more than 100 business and industrial leaders from Macomb County. These persons represented a broad range of institutions and organizations, including manufacturers, accountants, insurance executives, lawyers, auto shippers and dealers, hospital and health care agencies, financial institutions, the military, and criminal justice systems.

The purpose of the meeting was to help the College assess and expand its role in the area's economic development. Participants met with College representatives in small groups to discuss specific areas of economic concern. It was the consensus of the gathering that the College was the best choice to act as the coordinator of economic development activities, as well as the facilitator of cooperative endeavors among business, labor, and government. Participants felt that active marketing of the College and its services and resources would enhance these roles. They stressed how important it was for the College to retrain workers for new technologies and to offer custom-designed courses for industry. Finally, participants felt that the College's political neutrality strengthened its leadership role.

The Center for Community Studies

The College has provided a public service and information resource for Macomb County by establishing its Center for Community Studies. The Center serves local and county governmental units, social service agencies, and companies whose work will benefit local residents. The Center provides the services of College staff as well as that of other experts on a short-term, intensive basis to work on specific community research or development projects. Access to the College's faculty in many different disciplines enables the Center to apply a broad spectrum of knowledge and technical expertise to a variety of community projects. The Center monitors economic and social conditions of Macomb County and consults on various community development projects.

The Center has undertaken a number of projects. It served as the research arm for the Task Team on Economic Development when it undertook the public opinion survey of Macomb County residents. The Center has served as a consultant on economic development issues to the South Warren Research Council and has conducted studies on behalf of local community groups. It also has done a census analysis for the Warren Planning Commission and has conducted a study for Mt. Clemens city officials on the effect of tax abatements on that city's economic structure.

Interfacing with State and Local Agencies

State agencies. In its leadership and coordinating role for economic development, the College interacts with numerous state and local agencies and organizations. At the state level the

College works mainly with three different departments. The first is its close working relationship with the Michigan Department of Education, particularly with the Community College Unit and the Vocational-Technical Education Service. The Community College Unit has looked to Macomb as a leader in economic development and high technology training. The College was awarded a grant by the Michigan State Department of Education to produce a slide-tape presentation on the role of the state's community colleges in economic development. The Vocational-Technical Education Service has some funds for providing training for new and expanding industries. These funds were involved in providing orientation and training for present and future workers of Volkswagen of America's new plant in Sterling Heights.

The College also has an important interface with the Michigan State Department of Labor, particularly with its Office of Industrial Training. This is the office that has the funds for training to help new and expanding industry. The State Department of Labor was also involved in the funding of the Volkswagen project, as well as the robotics training for the Downriver Community Conference. (Both are described in further detail in the "Customized Training Programs" section.)

The Offices of Community and Economic Development are in the Michigan Department of Commerce, and both work with the governor's office in fostering economic development for the state. The Department of Commerce joined with the Department of Education, the Michigan Industrial Developers Association, and the University of Michigan's Industrial Development Division to develop the *Michigan Economic Development Education Manual* (Dane, et al. 1981). They also provided a series of training sessions.

Macomb Area Work-Education Council. One of the local organizations in which the College actively participates is the Macomb Area Work-Education Council. A major emphasis of the Council is to enhance economic development. The Council provides the vehicle for bringing together leaders in business and industry with educational leaders so they can work toward common goals.

A key committee in the Council is the Economic Development Committee. This Committee is chaired by the academic vice-president of the College, who is also on the Executive Board of the Council. The Committee works closely with the three chambers of commerce in the area. It has conducted an industrial retention survey of selected employers and is also developing an inventory of training resources. The Committee is particularly concerned with the retention of industry and the retraining of workers.

Another service of the Work-Education Council was its survey of the training needs of the 200 Economic Development Corporation members in the county. The College was deeply involved in this survey and subsequently conducted workshops for such public officials. The director of the Macomb Area Work-Education Council, Kenneth Yoder, described the College as particularly helpful when organizing leaders to address community problems, because "the College reaches out like roots into the community, more so than any other institution."

Economic Development Corporations. The College serves the needs of local Economic Development Corporations when requested to do so. One example is the training workshops for Corporation members conducted by the College. Each community with legal jurisdiction has the authority to establish an Economic Development Corporations. The members are usually appointed by the City Councils or Township Boards. Their main activity has been to establish tax abatements to attract industry to their particular community. This practice has been somewhat controversial, because communities in the same area compete with each other to lure a company to move a few blocks to gain a tax advantage. Proponents of the practice say that such tax savings to a company enables it to survive or expand and hire more workers.

Other linkages. Because the College has "its roots out in the community," it interacts with many other organizations and agencies. It is in close communication with chambers of commerce in the county, with other colleges interested in cooperatively addressing economic development needs, with high schools and area vocational schools, with Private Industry Councils serving CETA programs, and with many other community organizations.

College Structure for Upgrading and Retraining

There is a three-pronged approach within the College for serving the upgrading and retraining needs of workers for industry: (1) Tailored Education Programs and Services (TEPS), (2) Continuing Education programs, and (3) regular occupational courses.

Tailored Educational Programs and Services (TEPS)

Tailored Educational Programs and Services or TEPS is a community service that Macomb College offers to its local business and industry. The College uses the expertise of its faculty and staff, its sophisticated equipment, and educational know-how to service the unique educational needs of individual companies. These customized courses vary in duration from a few hours to several months and can be conducted either at the company site or at one of the College's campuses.

TEPS programs have covered hundreds of subjects such as computer graphics, numerical control, word processing, robotics, security, management, industrial supervision, metallurgy, welding technology, and labor relations. The courses may be either for credit or noncredit. Employers have used TEPS to upgrade skill levels or retrain existing personnel, whether they are apprentices, first-line supervisors, management staff, or clerical workers. Requests for customized training services are coordinated through the office of the academic vice-president, who calls upon the appropriate persons with the required expertise to design and provide the special program. This approach makes the resources across the College available to meet industry's special training needs and has someone with the necessary authority to restructure or reassign as necessary.

A sampling of the kinds of companies served and the types of upgrading and retraining provided by TEPS include: General Motors Corporation (local divisions), industrial safety training; The Cross Company, upgrading of skilled and semi-skilled employees in electrical and hydraulics and human relations and supervisory training for supervisors; the Hydra-Matic Division of General Motors Corporation, upgrading of skilled and semiskilled employees in electrical and preapprenticeship preparation of unskilled workers; Chevrolet Motor Division of General Motors Corporation, upgrading of die sinker journeymen; Ford Motor Company (Sterling Plant), upgrading of electrical journeymen; Bon Secours Hospital, seminars on revision of office and secretarial practices; and Lakeside Mall, effective management skills for retail managers.

Continuing Education Division

Macomb Community College is under the jurisdiction of the vice-president for student and community services. This is where courses and programs of general occupational and professional interest are offered, and where individuals can also enroll to meet their own upgrading and retraining needs. This division houses the Small Business Institute, courses to develop other business skills, technical classes, and health services classes.

The movement in continuing education at Macomb has been strongly toward professional development courses and away from recreational kinds of courses. With the opening of the new Allied Health building on campus, there will be a strong outreach to meet the continuing education needs of health professionals. Courses in continuing education offer continuing education units (CEUs) and community service (CS) credits, which are not applicable toward a degree.

To clarify the difference between Tailored Educational Programs and Services (TEPS) and Continuing Education, the former consists of contract or customized courses for a company, while contining education courses are those designed to meet general community upgrading and retraining needs in which individuals can enroll.

Small Business Institute. Since 1977 Macomb Community College has offered this special program to meet the needs of individuals who own small businesses or are planning to start one. The Institute specializes in providing practical information on how small businesses operate. This information is provided through noncredit short courses, seminars, and conferences.

Some of these seminars are developed and offered in collaboration with three other community colleges in the greater Detroit metropolitan area. The three college representatives work together to plan, develop, and advertise the courses. This maximizes the use of staff time and other resources.

Regular Catalog Courses

To a large degree many of Macomb's regular technical programs have been developed in response to expressed needs by business and industry. These are programs leading to a degree or diploma. They are closely monitored and advised by industry, and the College's administrators believe that the programs thereby meet business and industry's training, upgrading, and retraining needs. These programs are continually modified and adapted to do so. Individuals may enroll in these programs on their own or business and industry may pay the tuition for their employees.

Robotics. The robotics program at Macomb is a good example of a program of study created in response to industry's needs. This program was established in cooperation with the Society of Mechanical Engineers. Two years were spent in planning the curricula and in selecting the equipment. Students who have enrolled include employed mechanical engineers who want to acquire robotics experience in anticipation of job trends in the state.

In the first two years of operation, the program graduated forty-one technicians in robotics, all of whom were quickly hired by industry for high-paying jobs. The robotics program currently has nearly four hundred students, ranging from young high school graduates to forty-year-old engineers retraining for a new high-technology world after losing their jobs as the result of cutbacks and technology changes in the automotive industry.

To meet the needs of prospective robotics employees as well as industry, the College planners built flexibility into the program. In order to retrain people who have had technical jobs but are currently unemployed, College staff members study students' backgrounds and then plot individualized programs. Macomb has classes in such aspects of robotics as electronics, hydraulics-pneumatics, blueprint reading, drive linkages, metering, welding, and numerical control. In the view of College administrators, such program versatility is needed because the day is not far off when computers will help design robots, help make them, and then direct them in manufacturing products.

CAD/CAM training. In response to industry's changing needs, Macomb Community College has integrated computer-aided design and computer-aided manufacturing (CAD/CAM) into its traditional design and drafting curriculum. This exemplifies the College's commitment to provide industry with employees who have up-to-date skills. College staff selected equipment that could perform mechanical, architectural, and electronic design equally well. The curricula in which this equipment is used combine conventional drawing theory and methods with the use of an interactive CAD/CAM system.

Under the College's Applied Technology Programs, apprentices sponsored by their employers take courses to upgrade their skills in design and drafting. Apprentices receive classroom instruction at Macomb and computer graphics training at the employers' sites. This enables Macomb to share both its own CAD equipment and limited training facilities with local industry.

CUSTOMIZED TRAINING PROGRAMS

Volkswagen Personnel Orientation and Training

Macomb Community College took a dominant role in providing start-up training for workers at the new Volkswagen of America plant in Sterling Heights, Michigan. The College developed and implemented training modules and established assessment procedures for an estimated four thousand present and future employees of the company.

The attention of key people at Volkswagen was immediately drawn to Macomb Community College by a number of events and needs. Many of the first employees at the new Volkswagen plant were former Macomb students. Also, the College held an open house for Volkswagen executives to talk with the department heads at the College. This enabled the company to see and evaluate the educational resources there. At this time Volkswagen was looking at various educational institutions to provide apprenticeship programs.

The Volkswagen Company was well served by strong cooperation among various state and local organizations and agencies. The Michigan Department of Labor defined the training the company would need and developed a training manual. This manual contained descriptions of programs and a broad-stroke outline of curriculum content—not instructional materials. It also provided training films.

Volkswagen selected Macomb Community College to develop the actual instructional materials and teach the program. Macomb applied to the Michigan Department of Education for a grant to cover the salary of a program coordinator from Macomb to develop these materials and direct the training. The grant was received and the College assigned this role to the associate dean for business/public service, Art Kingsbury. Further support to develop a curriculuim was received from the Michigan Department of Labor. Throughout the process Kingsbury used Volkswagen supervisors along with professional teachers—a team teaching approach.

The State Department of Labor's master plan training manual also needed more refinement. Faculty members at Macomb were identified to do this. This work, which took three months, was financed by the Michigan Department of Education and Macomb Community College. The materials developed included such topics as office administration, training the trainer, hazardous materials control, robotics, welding, apprenticeship training, security survey study, and decision making and problem solving.

After all this work was completed, Volkswagen deferred its production date, putting the educational program on hold. However, this strong cooperative endeavor has provided good working relationships between the company and the College. Plans have been made so that when Volkswagen again starts production, Macomb will provide the needed educational services.

The key people at the College and at Volkswagen of America involved in this endeavor were Macomb President Albert Lorenzo, Academic Vice-President Lyle Robertson, Art Kingsbury (who directed the program), and Marsha Mills from Volkswagen's Personnel Department (the company liaison). Mills reports:

> Macomb took a lot of initiative to help Volkswagen. A college like Macomb has more flexibility and is more geared to the world of work than is a four-year college. The Michigan Department of Education also responded quickly and supported the undertaking. In fact, there was great cooperation with the State Departments of Education and Labor and the College all working together with us.*

Robotics Training for the Downriver Community Conference

Robotics training is being provided by Macomb through an agreement between the College and the Downriver Community Conference—a consortium of fifteen communities downriver from Detroit and outside the Macomb district. Wayne County Community College, in whose district the communities are located, conducted the assessment of candidates for the program and provided the basic skills development courses for these persons. Graduates of the program will be prepared for such jobs as robot installers, robot programmers, robot application technicians, robot design technicians, and robot mechanics. Those completing the course will receive fifty credits toward an associate degree and a certificate from the Society of Manufacturing Engineers. The robotics program includes seventeen specific technical courses ranging from blueprint reading and electric theory through fluid and pneumatic power, as well as electrical automation.

The Downriver Conference has a $3.8 million grant from the U.S. Department of Labor that is specifically intended for use in retraining people from four local manufacturing facilities that were shut down. The majority of participants are unskilled laborers who need to be retrained quickly so they can get jobs and return to work.

The College has expedited the process by compacting its regular robotics program. The Downriver program consists of an intensive thirty-six week, thirty hours a week course. To make sure students in the course can endure that kind of pace and handle the material, there is a thorough two-week pretesting period. These tests measure the applicants' retention in mechanical aptitude, space relations, abstract relations, mathematics, and English. Of particular interest is the level of the applicant's desire for and commitment to the program. From nearly seventeen hundred people, twenty-five were selected for the first class in the program. The course is taught in the robotics lab on the Macomb campus, and twenty-five students are all that can be accommodated in the facility. Students whose unemployment benefits have run out receive a minimum-wage stipend while in class to enable them to continue and finish the course. At the completion of the course, the College and the Downriver Conference will jointly operate a "Job Fair" that will bring persons from firms using robotic technology to campus for the students to meet.

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*Telephone interview with Marsha Mills, Personnel Department, Volkswagen of America, 28 June 1982.

An associate dean for Technical Education at the College, David Pilon, is in charge of administering the program for the College. With the support of the academic vice-president, he has been able to bend normal operating regulations of the College to meet the special need of the Downriver program that conflicted with normal College operation. Such things as length and timing of the course, use of faculty and facilities, registration, books, and equipment all required special treatment. With the strong backing of the president and vice-presidents, the rest of the College provided considerable flexibility and cooperated readily to make the program work. A facilitating factor was that Pilon would devise a proposed solution to each problem and present it to the operating unit involved so that staff would see a way around the barrier.

It is the belief of those involved that what it takes for such a project to succeed is complete commitment from the top down and good professional rapport and communication among those responsible for the program.

Customized Programs for General Motors

The College has been involved in many programs and projects with General Motors, in addition to its regular apprenticeship programs and cooperative education experiences.

GM "purchased" an automotive instructor for a year from Macomb to assist with an intensified dealer mechanic training program. The instructor received exhaustive training from GM in state-of-the-art technology and is now teaching dealer mechanics. This benefits the College by keeping its automotive service classes up to date. The use of College facilities and instructors is doubling the number of dealer technicians who can be trained to handle the latest GM technology. Macomb is one of about sixty community colleges nationwide that General Motors plans to involve in this activity.

The College also trained on campus a group of twenty-eight people from Saltillo, Mexico, to work in a General Motors plant within Mexico. The project involved the services of a Macomb instructor who is both bilingual and well grounded in the subject matter. The concentrated instruction, using all GM materials and following GM specifications, ran for four and one-half weeks at the College and was integrated within a longer period of orientation and training by the corporation.

UAW-Ford National Development and Training Center

The 1982 Ford and United Auto Workers (UAW) bargaining agreement contains a provision for the establishment of a UAW-Ford National Development and Training Center. The program, the Center, and its activities are to be funded by a contribution of five cents per hour worked per employee—estimated to amount to $8 million to $9 million a year. This is an historic agreement in that the upgrading and retraining is to be provided for both active and laid-off workers. This is the first time that a major American corporation has financed the retraining of laid-off workers so that they can achieve employment with that company or with any other employer.

The UAW-Ford National Development and Training Center is to be located near Detroit in Dearborn (on the campus of Henry Ford Community College), and will be the national headquarters where pilot programs will be tested and then disseminated to other plant locations where needed throughout the country. This will help ease the problems of both employees and employer when workers are displaced by new technologies, new production techniques, shifts in customer product preference, and plant closings.

When the president of Macomb Community College learned of the provisions for this National Development and Training Center, he wrote to Ford and the UAW, submitting a proposal on how Macomb College could make a substantive contribution to the establishment and operation of this National Center. He proposed that the College assist the Center in the development, testing, and refining of models for counseling (with emphasis on career guidance, but not overlooking total human needs), as well as training and retraining of the hourly work force and supervisory personnel. In time his proposal was accepted and persons with the needed high expertise at the College were selected to work on the project. Macomb College is working closely with Henry Ford Community College, on whose campus the Center will be place, and who will be providing the first phase of training. The objectives of the work to be done by Macomb College for the UAW-Ford National Center include—

1. Developing, testing, and modifying a counseling model for active and laid-off employees that incorporates career opportunities, aptitude and interest assesament, human development opportunities, career guidance, job placement opportunities, and job search techniques where appropriate;

2. Developing a model for the training of in-plant facilitators;

3. Developing processes and forms for identifying future educational/training needs that can be addressed in phase 2 of the project;

4. Identifying local training resources that could be used to supplement existing in-plant training practices, and documenting the process;

5. Identifying systems that can link employment opportunities across states (e.g., job placements, career planning, and training locations);

6. Establishing communication vehicles that will provide for knowledgeable decision making on the part of the target populations;

7. Developing a model for implementing a training program;

8. Developing a model for formative and summative evaluation of the processes as they are implemented;

9. Developing the specifications and a proposal for the implementation of these models in phase 2 of the program;

10. Identifying, informing, and assisting participants from the Macomb Community College and Ford Trade Readjustment Act (TRA) program;

11. Involving the Michigan Department of Education;

12. Establishing selection criteria for participants at the pilot sites for the purposes of testing and refining models.

All of these tasks will involve in-plant consultation and participation. Also, model development and testing will be responsive to both active and laid-off employees.

At the formal meeting to finalize the agreement among key parties from UAW, Ford, Macomb College, and Henry Ford Community College, the College representatives described both the

general approach to counseling by life career advisors and the content of the first two training programs. The first two training programs were Tool and Die Detailing and Accelerated Pipe and Pressure Vessel Welding.

This venture demonstrates a quick response to an opportunity to serve in an important undertaking, and it reveals close cooperation and working together by key groups.

"Sunrise Seminars" for Retailers

The College conducts a series of "Sunrise Seminars" for retailers at Lakeside Mall in Sterling Heights. These classes are taught from 8:00 to 10:00 on Thursday mornings, and provide continuing education for retailers. In addition to the professional development the classes provide, the store owners benefit from the regular interactions that the learning situation provides.

OVERVIEW OF PROCESS FOR DELIVERY OF UPGRADING AND RETRAINING

Linkages

Many persons in diverse roles throughout Macomb College are key agents in establishing relationships with business, industry, and labor. The president has exhibited strong leadership in uniting the College with industry in critical endeavors. The deans for continuing education, technical education, and business/public service also actively work with industry on companies' upgrading and retraining needs, as do various associate deans. The upgrading and retraining system in place is a dispersed one, making the human resources of the whole College available. Top management persons are the key actors in deciding what activities will be pursued and who will be involved.

The administrators of the College are sensitive to the economic development needs of both the county it serves and the greater Detroit metropolitan area in which it resides. The specific internal structures the College has created to address economic development needs are its Task Team on Economic Development and its Center for Community Studies. The internal structures established specifically to provide customized and specialized training programs for companies and workers (both active and unemployed) are the Tailored Educational Programs and Services unit and the Continuing Education Division.

Although administrators and faculty in technical and business areas have active and close working relationships with industry, the viewpoint of the administration of the College is that their responsibility is to make the resources and services of the College known through their regular promotional channels—not through direct marketing efforts, such as telephoning or visiting companies.

Program Design and Delivery

Since Macomb responds in a diversity of ways to unique opportunities as well as to regular requests for retraining from area companies, there is no single established pattern for program design and delivery. The approach is one of creativity and flexibility to meet the area's economic development needs and industry's requests for upgrading and retraining.

There are, however, various channels of response, including Tailored Educational Programs and Services (TEPS), the Small Business Institute courses, the Continuing Education Division offerings, workshops and seminars, and the establishment of special task forces and program centers. From these response channels common elements for planning, development, and operation can be extracted.

Needs Assessment for Upgrading and Retraining

Much of the College's work in upgrading and retraining is done cooperatively with other organizations. For start-up training the Michigan Department of Labor may do the needs assessment. The College's Center for Community Studies conducts various kinds of surveys of community education needs, such as the public opinion survey of Macomb County residents in December 1981. In working with particular companies, there is joint agreement of what is to be accomplished.

Training Agreements

In most instances there will not be a formal training agreement, although there may be a letter of understanding. However, in major efforts, such as the provision of the College's services to the UAW-Ford National Center for Development and Training, a proposal is prepared.

Course Development

To reduce program costs whenever possible, previously developed course material is adapted to the particular company's training needs. Because Macomb's regular credit courses are developed in close cooperation with advisory committee members from industry, the only adaptations that may be needed are to fit the course to a particular time frame, the specific equipment used by the company, and the specific competencies desired.

To develop the orientation and training program for Volkswagen, the College worked jointly with the company, the Michigan Department of Labor, and the Michigan Department of Education. The College then did additional work to refine the instructional materials. This major undertaking was financed with funds from both of these state-level departments.

Funding and Budget

The state of Michigan has limited funds for helping new or expanding industry receive free training services when new jobs are created. The main funds are administered by the Office of Industrial Training in the Michigan Department of Labor. Lesser funds are available through the Vocational-Technical Education Service in the Michigan Department of Education. This agency provides grants to eligible postsecondary and secondary institutions that operate customized training programs for (1) new and expanding companies (2) companies that are considering leaving a community due to their inability to hire a trained work force, and (3) companies, that are experiencing structural unemployment but that could retain employees if the workers were retrained. The main need in Michigan is to retain present industry and help it to prosper.

For most customized training, the company pays the cost. This may be paid directly to the College or through a company tuition reimbursement program for employees.

The College has been very skillful in maximizing its resources to serve the economic needs of the area by reassigning its people and by forming special task forces and centers. Generally this has had to be done without any significant expenditure of funds. The College also helps the community by serving as an economic development catalyst and by capacitating other organizations and agencies to contribute to economic development activities. Such leadership provided by the College is considered part of its mission.

Scheduling, Facilities, Equipment, and Materials

Because the laboratories and classrooms on campus are occupied by regular credit courses during the day, some customized courses are offered at the particular company's plant or other job site. This is usually preferred because that is where the workers are who are to be trained, and it utilizes the equipment to be operated by the workers. However, in a situation where only the College has the needed equipment (such as in providing training in robotics), the customized classes are scheduled late in the evening and on weekends. The underlying objective is to provide customized training where and when the company wants it. With the appropriate college administrator paving the way, support units within the College respond flexibly to the company's need, even when doing so requires departing from regular procedures.

If specialized equipment or training materials that the College does not have are needed, they may be supplied by the Michigan Departments of Labor or Education, or may be furnished by the company. The College does not have funds budgeted for the purchase or rental of special equipment or materials.

Instructional costs of customized programs are borne by the company or the governmental agency sponsoring the training, upgrading, or retraining.

Selection of Instructors

In both the Tailored Educational Programs and Services (TEPS) and in special courses offered through the Continuing Education Division, the first choice for selecting instructors is to use current faculty members. The contract with the faculty union requires that when there is an opportunity for extra teaching in a short course or in the Continuing Education Division, the opening must be posted for at least five days—during which time faculty persons have the first opportunity to bid for the assignment. It often is not possible for regular faculty members to participate, however, because their assigned teaching schedules would conflict with the times the special course is offered. Also, the Continuing Education Division salary rates are lower than for regular full time teaching. However, the opportunity is there.

The Continuing Education Division and each occupational unit maintain a pool of qualified persons for part-time teaching. For particularly important assignments, regular full-time faculty members may be pulled from their normal schedules and reassigned. An example of this occurred when Associate Dean Art Kingsbury was assigned to handle the special Volkswagen of America orientation and training effort. For high-technology courses, the College usually must use its own instructors or an expert from the company requesting the course. (For example, the robotics course for the Downriver Conference program is taught by a Macomb instructor.) As in other aspects of course planning and execution, instructor selection and orientation are done in close coordination with the company requesting the training.

Recommendations Drawn from Michigan Economic Development Survey

The Michigan State Board of Education (1981) recently funded a survey and study to assist educators with methods for increasing involvement in local economic development efforts. Macomb Community College was one of three organizations involved in conducting the study. The resulting *Michigan Status Study Report: Educational Involvement in Economic Development, 1979-81* contains principles and recommendations for educational institutions planning for economic development activities. These principles and recommendations (see figures 11 and 12) were drawn from the findings of the study.

Based on the analysis of the survey responses, the Status Study Report recommended that each educational institution take responsibility for training, retraining, and upgrading for new, expanding, and existing companies by following the five steps for educational involvement that are given in figure 12.

SUMMARY

Macomb Community College, as part of metropolitan Detroit, serves an economically depressed area suffering high unemployment. The automobile and steel industries that abound in this part of Michigan are struggling to meet the competition, install new technology, and maintain current plants. This economic adversity affects all the related support industries and businesses in the area.

Key Factors in Upgrading and Retraining at Macomb

The College has assumed leadership and is serving as a catalyst in rallying community organizations and agencies to address the area's economic development needs. Through workshops, seminars, meetings, and training sessions, the College has endeavored to capacitate key organizations and persons in the community.

Macomb is also affected by the tight economic conditions that restrict funds for education. Nonetheless, the College has made resources and expertise available by restructuring itself and reassigning personnel as needed. Under the creative leadership of its president, Albert Lorenzo, the College has made positive impact on the needs of the area through involvement in key events and undertakings. The Center for Community Studies at the College undertakes community surveys, conducts research for community organizations, and makes faculty members available as consultants to various organizations and governmental agencies in the area. The College's Task Team on Economic Development has spearheaded the College's involvement in economic development activities, working closely with various governmental agencies and key business and industry leaders.

There are two main units within the College that provide upgrading and retraining services for business and industry. The Tailored Educational Programs and Services (TEPS) unit will tailor a course of training or education to meet the unique needs of an individual company. TEPS has provided such customized training in a wide variety of subject areas, with instruction lasting from a few days to several months. Instruction is offered either at the company plant or on campus.

INSTITUTIONAL PLANNING FOR INCREASED INVOLVEMENTS

I. Combined resources surpass the capabilities of any one institution to provide training and services for economic development.

II. Business/industry/economic developers rarely know the appropriate person, department, or institution to contact with specific requests for training or services.

III. In the absence of prior experience with educational institutions, business/industry/economic developers underestimate the capabilities of the institutions to provide flexible and custom-designed services and training.

IV. Activities related to encouraging existing business/industry to stay, based on the availability of a trained work force, are articulated directly through efforts of educational institutions and not usually through economic developers.

V. Industry with experience in working with educational institutions providing custom-designed training prescribed:

   A. Instructors who demonstrate cognizance or practical applications in industry.

   B. Instructors who can relate to "industrial types" of people.

   C. Abstract concepts broken down and presented over longer periods of time.

   D. Prerequisite learnings in related skills areas.

   E. Course offerings immediately following the end of a given shift, with possible provisions for meals.

   F. Monitoring of employees' progress.

   G. Evaluation of outcomes in terms of employees' performance on specific job tasks.

VI. Companies without training units rely heavily on educational institutions for writing the curriculum, monitoring and evaluating the training, and assuring the transfer of training to practical applications.

VII. Companies with training units seem to prefer working directly with the instructor, and not with a liaison person who is not doing the instruction.

VIII. Companies may have their own resources to contribute, including facilities, equipment, and potential instructors, which might be tapped through coordinating efforts of educational institutions.

IX. Companies may be unfamiliar with the exact meaning of educational terms such as "competency-based," "individualized" instruction, and "career counseling." Also fewer words often rely the information to industry more precisely than phrasing commonly used by education.

Figure 11. Michigan Status Study's Principles for Educational Institution's Planning

SOURCE: Michigan State Board of Education, 1982, p. 19.

RECOMMENDATIONS

Step 1. Identify institutional resources available to industry:

A. Consultant services
B. Facilities
C. Equipment
D. Services (assessment, screening, work adjustment, etc.)
E. Instructional
F. Administrative
G. Other

Step 2. Identify a contact person and/or department responsible for:

A. Linkages with outside resources available to business/industry
B. Linkages among internal resources available to business/industry
C. Linkages with economic developers for possible new and expanding business/industry.
D. Outreach to established business/industry
E. Receipt and interpretation of specific requests
F. Identification of instructors
G. Arrangements for facility/equipment usage
H. Monitoring of services
I. Evaluation of services
J. Follow up with the business/industry served

Step 3. Identify or establish internal procedures:

A. The person(s) respnsible for receiving business/industry requests
B. Curriculum development procedures
C. Administrative policies regarding the use/monitoring/training of full-time and adjunct instructors for business/industry training programs
D. Administrative policies regarding facility and equipment usage
E. Administrative policies regarding the costing of programs and services

Step 4: Identify limitations:

A. Institutional mission and priorities
B. Availability of qualified instructors
C. Hours/days/months of availability
D. Financial considerations
E. Geographical location in relation to business/industry
F. Administrative capabilities in terms of time available

Step 5: Establish a marketing plan consistent with the institution's identified capabilities:

A. Particiption in community groups representing business, industry, labor, public agencies, and active economic development units
B. Use of advisory/craft committees
C. Awareness among the institution's full-time and part-time staff members
D. Visitations to business/industry
E. Brochures distributed to places of business/industry
F. Talks given before service clubs and groups
G. Brochures for economic developers to use with business/industry planning to locate or expand
H. Brochures distributed within places of business/industry
I. Flyers sent to selected places of business/industry in cases where additional students are needed to fulfill a specific request from business/industry
J. Communication of "success stories" within and outside of the educational institution

Figure 12. Michigan Status Study Recommendations

SOURCE: Michigan State Board of Education, 1982, p. 20.

The Continuing Education Division at the College offers a great diversity of short courses and workshops to meet the specific needs of companies or individuals requiring upgrading or retraining. Continuing Education also administers the Small Business Institute, which provides courses to help small business owners and operators. An example of this is the "Sunrise Seminars" taught for retailers at Lakeside Mall.

The College took the initiative in providing the educational services in some of the major economic development enterprises that are making a significant contribution to the area. For example, when the United Auto Workers-Ford agreement with its provision for establishing a National Center for Development and Training Center was announced, Macomb President Lorenzo immediately sent a proposal outlining counseling and training services that the College could provide. This was accepted, and Macomb College is now a part of this historic undertaking. When Volkswagen of America decided to locate in Sterling Heights, the College held an open house for Volkswagen executives to demonstrate the resources the College had available for the company. Macomb was selected to provide the orientation and training services for the company. In so doing, the College has worked closely with the Michigan Department of Labor and the Michigan Department of Education.

The College is noted for its excellent robotics program. The Downriver Community Conference, a consortium of fifteen communities downriver from Detroit, had a multi-million dollar grant to help address the extensive unemployment problem in that area. As part of this project, Macomb Community College was asked to retrain unskilled laborers through its robotics program. A careful selection process and intensive training produced outstanding results for the participants and the Downriver Conference.

General Motors has received many special educational services from the College. For example, GM "purchased" an automotive instructor for a year from Macomb to assist with an intensified dealers' mechanics training program. After receiving exhaustive training from GM in state-of-the-art technology, the instructor is now using this experience in teaching dealers' mechanics at Macomb College for GM. The College also brought twenty-eight persons from Saltillo, Mexico to its campus and trained them to work in a GM plant in Mexico. Conducting this intensive four and one-half week course required the services of a Macomb instructor who was bilingual as well as grounded in the subject matter.

Overall Success of Macomb's Approach

The College has made very creative use of its resources to serve the economic development needs of its area. Its administrators have been alert to opportunities to serve and have been successful in involving the College in activities that make a significant impact on the economic health of Macomb County and beyond.

As the state of Michigan further develops its system to help attract new and retain old industry, better coordination and cooperation among various state and local agencies should result. As community colleges become more involved as key team members, Macomb College will be able to play a larger role in the process. A crucial need is additional funding to enable the College to go beyond its present mission and establish a centralized unit specifically staffed to provide upgrading and retraining services for industry.

OVERVIEW OF THE INSTITUTE AND SETTING

The State Technical Institute at Memphis (STIM) has come a long way since it was established in 1963 by an act of the Tennessee legislature. The Institute has become noted for its commitment to serving industry and for its flexibility in delivering high quality, on-target technical training in a broad spectrum of technologies. STIM's clearly defined mission statement places a high priority on cross-training and upgrading of adult workers, much of which is offered through the Institute's special Business, Industry, Government (B.I.G.) Division. Since its establishment in 1975, the B.I.G. Division has trained more than sixteen thousand workers in Memphis and west Tennessee.

The Institute's educational objective is to present the humanities, related subjects, and technical materials in such a way that students will not only understand the theories and acquire the skills of their field, but also develop qualities needed for meeting their responsibilities in the work place. STIM also serves the unique training needs of the community. It has trained, for example, a large number of U.S. Navy personnel from the Memphis Naval Air Station (the navy is one of the largest employers in the Memphis area). The Institute has also joined with other two- and four-year certificate and degree-granting institutions as participants in a program called Navy Campus for Achievement.

STIM has worked with the community in both good and bad economic times. The economy of the area, as with so many other places, is currently not strong. Unemployment in Memphis is high (12 percent); in the entire state, the unemployment level is 11 percent. Recently, three major plants have closed in the Memphis area: the John Morrel Company, the Firestone Tire and Rubber Company, and the International Harvester Corporation.

Memphis traditionally has been a major distribution site; thus distribution employees are an important part of the work force. Fortunately, employment is still relatively strong in this field, just as it is in service industries. Manufacturing firms, however, have suffered greatly. This downturn is being partially reflected by lower enrollments in such STIM programs as building and construction, architecture, and accounting. The most active enrollment areas now are in data processing and engineering technology. The Institute can hardly fulfill the demand for trained workers in these two fields.

OVERVIEW OF STRUCTURE FOR UPGRADING AND RETRAINING

State-level Structure

State Community/Technical College Structure

The State Technical Institute at Memphis is one of Tennessee's four two-year state technical institutes. The Tennessee Annotated Code (Section 49-2610) established the purpose of the institutes and their "role and scope" in the following manner:

> A regional technical school shall be established by the State Board for Vocational Education in such location or locations as it may deem necessary to provide technical training, and said regional technical school shall function as a two-year terminal training center for the purpose of (a) training engineering technicians for industry and (b) preparing the student to earn a living as a technician or technical worker in the field of production, distribution, or service. (State Technical Institute at Memphis 1981, p. 8)

As previously noted, STIM is one of four state technical institutes. The other three are in Knoxville, Nashville, and Johnson City. The state's additional postsecondary training network is composed of twenty-eight vocational-technical schools (one within thirty miles of virtually every community in the state), ten community colleges, and forty-five colleges and universities. A network of comprehensive secondary vocational schools trains high school students in a variety of technical skills.

Tennessee's Economic Development Structure

The primary state agency for economic development is the Tennessee Department of Economic and Community Development. This department includes the Tennessee Industrial Training Service (ITS)—the division that serves as the most direct link between the training and economic needs of the state.

The major purpose of the Department of Economic and Community Development is to support the development of new and expanding industry. Within this context, the purposes of ITS are (1) to assure prospective companies that they will have a trained labor force if their capital investment is made in the state and (2) to ensure that potential employees possess the basic skills and knowledge needed for specific jobs in such industries.

ITS "goes into action" the moment a company decides to expand or locate in Tennessee. The Department of Economic and Community Development reports that more than half of all the new jobs created in Tennessee over the last three years have been the result of industry expansion. ITS reportedly has played a major training role in this growth.

ITS operates using the following ten-step program:

1. Detailed task and job analyses are developed and used to tailor a training plan to meet a company's specific needs.

2. In cooperation with a company's own technical task force, lead-time schedules are keyed to personnel needs and construction plans.

3. Training materials developed from the task and job studies include employee orientation, training manuals and outlines, and videotapes and photographs of production procedures. All training materials are developed with the company's personnel and with their ongoing review and approval.

4. The training service coordinates the training program with employee recruitment activities, initiating a continuing working relationship between the company's personnel department and the Tennessee Department of Employment Security.

5. Facilities and equipment for developing specific job skills are provided either on site or at a nearby location. Much of the training is accomplished in a pre-employment phase, so that the company can assess learner performance prior to the actual hiring.

6. On-the-job training provides the overall technical training and refines occupational skills to conform to the company's performance standards.

7. Evaluation during the first phase of training examines possible revisions needed to meet a company's standards.

8. Special training programs for supervisors focus on first- and second-line supervision, with emphasis on training for new supervisors.

9. Training programs for specialists operating prototype equipment or responsible for unique processes in company are available through ITS.

10. Funding is provided for all phases of a company training program and is determined by the number of employees, skills to be developed, and beginning wages.

ITS uses the following criteria are used for determining whether such training program support is appropriate:

- A company's personnel to be trained must be associated with a new plant or a capital expansion such as new facilities, equipment, a new product line, and/or personnel buildup for additional shifts, or any combination of these.

- The ITS does not offer training or training support for replacement of employees through normal attrition, but will make recommendations on an appropriate vocational training center program for such persons.

In terms of liaison, ITS and the Tennessee Department of Vocational Education generally communicate by means of a staff person assigned to implement the flow of information between the two units. The specific working relationship between ITS and the State Technical Institute at Memphis will be discussed more fully later in this case study.

Institutional Structure

Organization of STIM

The four state technical institutes are administered by the Tennessee Board of Vocational Education through the Division of Vocational-Technical Education, and are operated under a fiscal independence policy granted by the Tennessee General Assembly. The board includes the governor and the commissioner of education (who serves as chairperson of the state board). Eleven additional persons serve on the board.

The major personnel in the administration of STIM include the president, the dean of evening and special programs, the dean of instruction, and the dean of student affairs. In addition, the administration is supported by the business manager, the director of administrative affairs, the director of administrative services, and a director of the navy contract programs. Figures 13 through 16 graphically illustrate the Institute's major organizational structures.

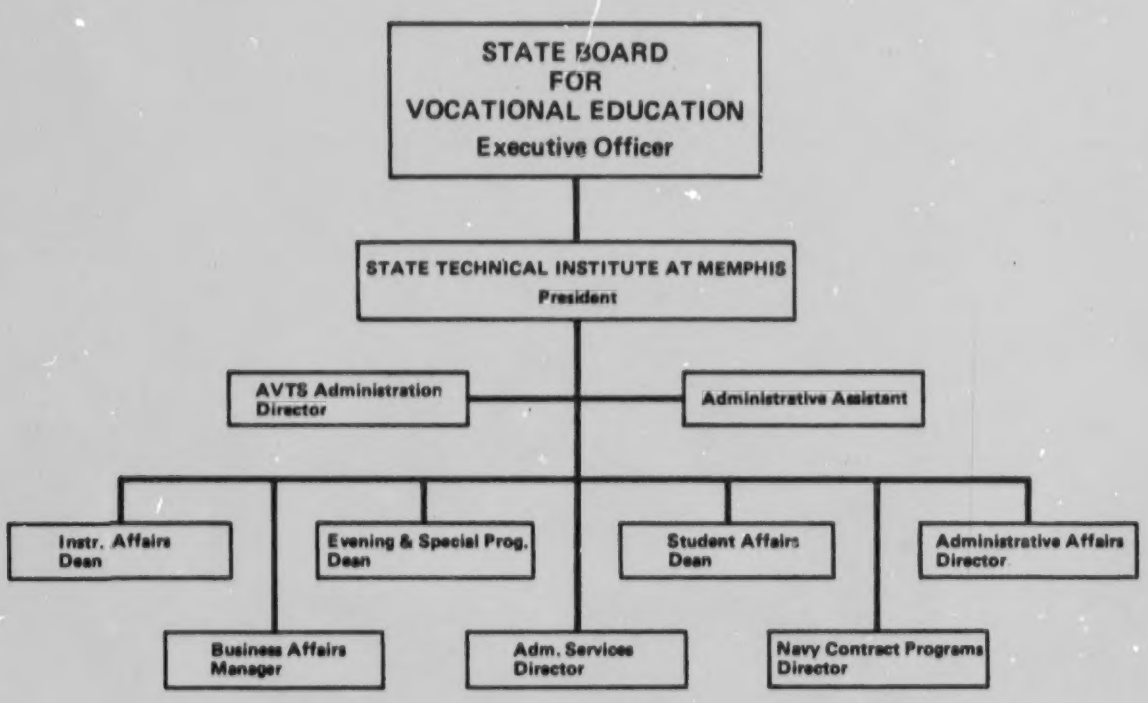

Figure 13. Organizational Chart of the State Technical Institute at Memphis

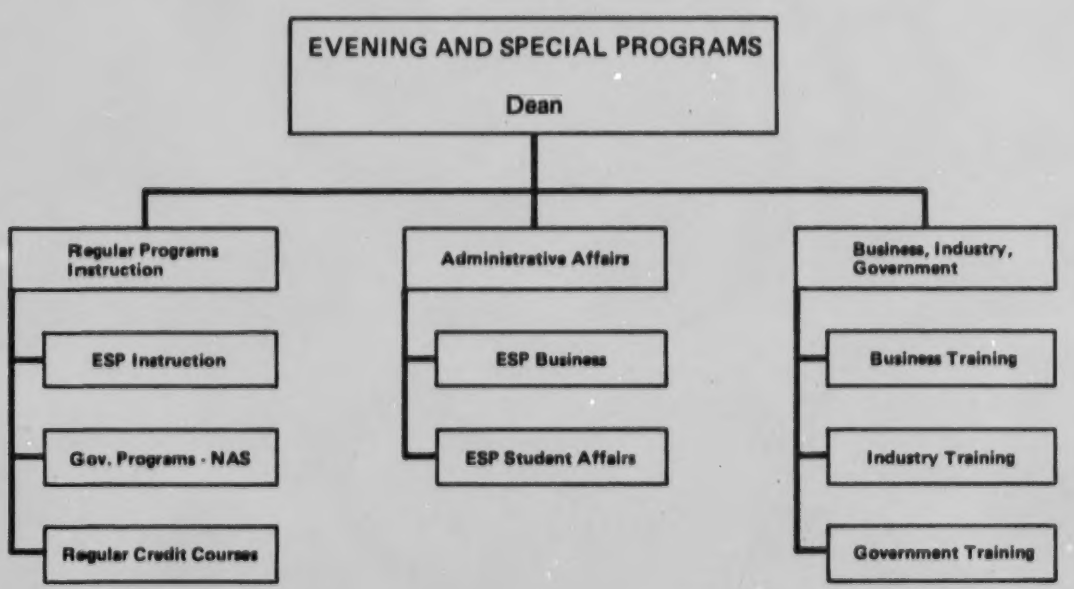

Figure 14. Evening and Special Programs at the State Technical Institute at Memphis

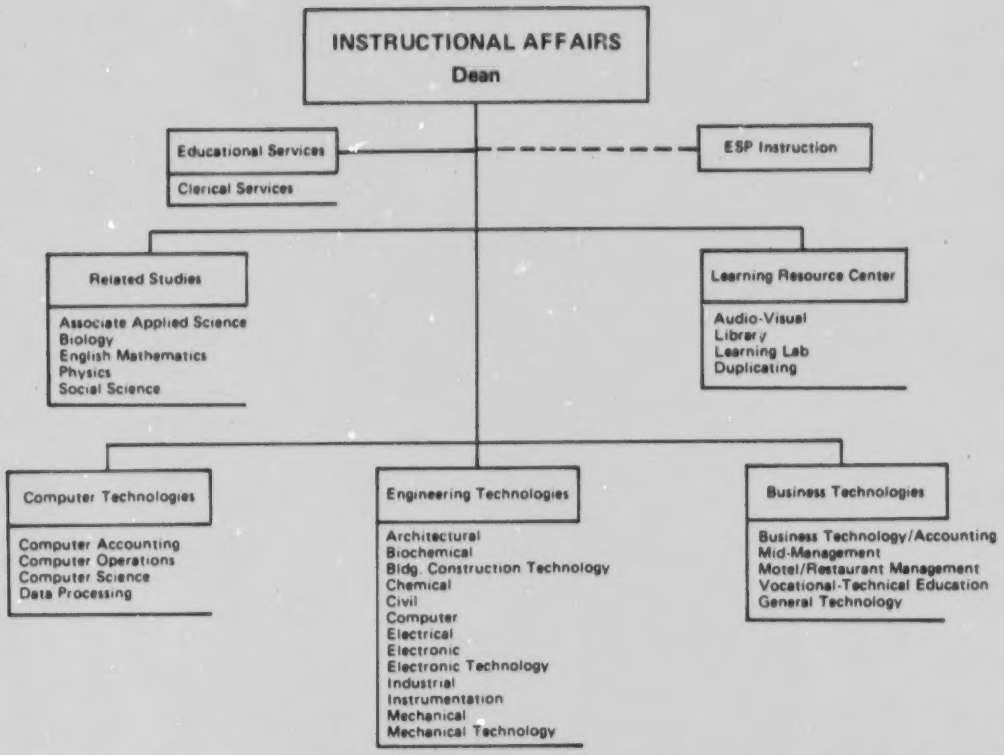

Figure 15. Instructional Affairs at State Technical Institute at Memphis

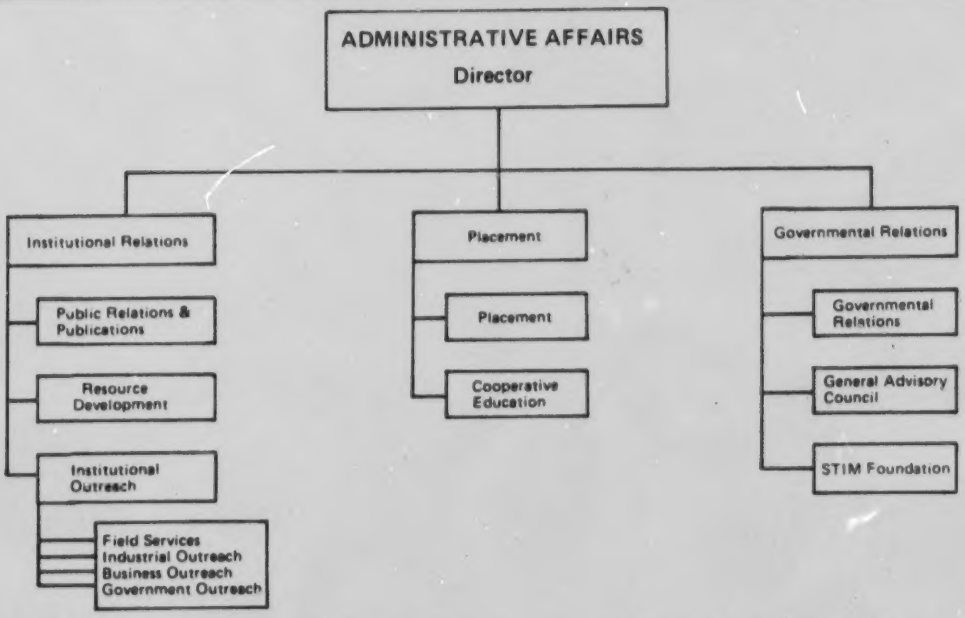

Figure 16. Administrative Affairs at State Technical Institute at Memphis

The Mission of STIM

In addition to the mandates of the Tennessee Annotated Code, the state's Vocational Education Act of 1963 and the 1968 Amendments to this Act require statewide planning in order to identify institutional objectives. STIM has responded to this requirement explicitly, as recorded in its *1981-1982 Catalog* (State Technical Institute at Memphis 1981):

- The *primary objective* is "to accept the broadest possible range of high school graduates and to produce the qualified aide to professional personnel in engineering, physical science, and computer science technologies, and the technician or technical worker in support of business and industry in the field of production, distribution, or service." (p. 9)

- The *secondary objective* is "to cross-train or upgrade employed persons as paraprofessions or technical workers for these same areas." (p. 9)

These broad goals are repeated in a number of STIM's publications and in statements by its leadership. For example, the *1981-1982 Catalog* underscores the goals by emphasizing that "we will strive to maintain flexibility in our programs and policies so that we may meet the new and changing needs of the educational and technical fields and of the industrial and business community" (ibid., p. 1).

STIM works cooperatively with other institutions in establishing open-ended curricula that allow students at any level to enter employment or to continue formal education with minimum disruption or loss of credit. The Institute is very explicit in noting that it is not a transfer station to four-year institutions that grant baccalaureate degrees.

Because of the priority given to cross-training and upgrading, a major focus is on the needs of business, industry, and government. In fact, the Institute's Business, Industry, and Government (B.I.G.) Division is solely and entirely dedicated to meeting those training needs. As a result, STIM delivers more than technical training; it is involved in public service.

Institutional Funding

The Institute reports the following pattern of funding:

- State funds, approximately 73 percent

- Federal funds, approximately 10 percent (Mainly Vocational Education Act funds plus a small amount from a variety of sources, such as library monies, Pell grants for students, programs for the disadvantaged, and so forth.)

- Student tuition and fees, 17 percent (Currently 17 percent, but STIM believes those monies will be increased to 20 percent. In the past few years, fees have increased 10 to 15 percent per year; however, tuition is still low at $125 per quarter.)

As a result of state legislation, the Institute has a single line-item allocation in the state budget. Once the specific amount has been identified, the Institute prepares a budget and submits it to the Tennessee Board of Vocational Education. When the board approves it, the Institute is operative.

One positive feature of the state relationship is that the Institute can revise its budget each October, if necessary. The need to do this is determined by fall quarter enrollment—the largest enrollment period. If enrollment is higher than the original projection, STIM can revise and submit a new budget. As a case in point, when the enrollment increased by 14 percent during the autumn of 1982, STIM submitted a new budget. The inordinate increase was due to new enrollments in the data processing area, which in turn was due mainly to the region's widespread unemployment and to the fact that data processing is seen as one of the growth areas throughout the country.

Distinctive Features of STIM

The organization of the Institute is geared from top to bottom to respond to the upgrading and retraining needs of industry. The strong institutional commitment starts at the top, and follows through to the rest of the organization.

A dominant feature of the Institute is its flexibility, with all units recognizing the need to be responsive in meeting industry's needs for customized training. The unique flexibility in the B.I.G. Division's budget, management structure, and operating processes is a good example of this feature.

A certain amount of funds is budgeted each year for the B.I.G. Division to provide the salaries of its administrator, coordinators, and support personnel. The Institute itself then supplies the funds needed for industry training. However, if the division finds that it has provided services to so many industries that its funds are low at the end of the fiscal year, a request can be made to the president for more funds. (To date, the president has always been able to reallocate funds to continue the operation of the division.)

A unique feature of STIM's management structure, of course, is the existence of the B.I.G. Division as a discrete unit. The division is housed in the Evening and Special Programs (ESP) area. The division head reports directly to the area dean. The B.I.G. Division has three coordinators of training services: one for business, one for industry, and one for government. The division has two instructors who function mainly as course developers. One is primarily in charge of technical programs; the other is in charge of business programs (particularly management development and human relations). STIM's Small Business Institute operates within the division. It is part of the small business network run by the American Association of Community and Junior Colleges. The B.I.G. Division has been designated as a part of the American Management Association Extension Institute (AMAEI). As such, the division offers AMAEI courses throughout Memphis and west Tennessee.

The Institute is currently developing a relatively new structure, an Institutional Outreach area with personnel who call upon industry to determine training needs, placement opportunities, cooperative work stations, and so on. Nevertheless, at this point it is the B.I.G. Division head and coordinators who probably bring in the most training requests from industry. They have both well-established contacts and an excellent reputation.

In terms of the Institute's operating processes, all courses that STIM provides to industry (upgrading, retraining, or start-up) are credit courses. The reason the Institute grants credit for all courses is that the reimbursement policy from the state is based upon the number of credit hours generated. Consequently, Institute administrators make certain that courses for industry meet state standards so that credit hours can be generated. This does not appear to interfere in any way with the Institute's flexibility to customize courses for industry.

Interfacing with State Agencies

The primary relationship of STIM with the state is through the Industrial Training Service (ITS), the training arm of the Department of Economic and Community Development. If ITS has a prospective company that is considering or has decided to locate a new plant in the Memphis area, ITS chooses one of the institutions in the region to provide training services. ITS then writes a specific contract specifying the funds to be used and empowering an institute to do the start-up training, normally at no cost to the company.

STIM holds a general contract with ITS for approximately $20,000 annually, which covers supervisory training and job instructor training. This is considered a "blanket contract" whereby the Institute can generally choose the companies—using ITS guidelines—on its own. This contract must be signed by the president of STIM, by officials in the State Department of Vocational Education and a number of other state agencies, and by the state governor. The "blanket contract" enables the Institute to respond to new companies in the state or ones who are expanding. Expansion is defined either as increased investment of capital dollars or increased hiring of new employees. Most of the training offered is in the form of customized courses for specific skill needs.

The Institute has assisted ITS in several other areas. For example, it has worked with an ITS client, the Sharp Manufacturing Company in setting up its preemployment training program. While the STIM instructor did not teach a formal class, he did contribute by serving as supervisor of quality assurance.

The head of the B.I.G. Division reports that she has a good working relationship with ITS. She deals primarily with one person in the ITS Nashville office, who provides an informational profile of the prospective client. From this person, the B.I.G. Division head receives a complete file on what already has been done by the ITS, how many employees the company has, how many shifts they have, and so on. B.I.G. Division staff then call the company to set up an appointment with the training manager or similar staff person. In short, B.I.G. representatives are well prepared when they meet company representatives. If a training program is agreed upon, it starts as soon as the company needs it.

In summary, ITS has the option of coming to the Institute and setting up a special contract or going elsewhere in the state system. Thus, ITS is not the actual training delivery unit; it instead serves as a contractor for the training resources available at STIM and other state training institutions.

Because of the current recession, there has been a decline in new and expanding industries coming to Tennessee. Consequently, both the demand for start-up training and the funding levels for this process are lower now than they have been in the past. Nevertheless, the mechanism is in place and will undoubtedly continue to be utilized successfully in the future.

Interfacing with Local Agencies

The Institute is involved with a number of local economic development agencies. The coordinator of the B.I.G. business unit reports that he is currently involved with the local

Chamber of Commerce, although not to the point where collaboration will bring in new industry.* However, this level of involvement is likely to increase in the near future.

There also has been increasing involvement with the local Private Industry Council (PIC). The council is attempting to work more closely with the Institute in the area of training. The prognosis is that the PIC, the Chamber of Commerce, and the different institutions will become more directly linked in the next two or three years.

Another linkage with local agencies is through cooperation with the area vocational-technical schools. The Institute's president reports a new "umbrella contract" with eight area vocational-technical schools, whereby those schools are under the administration of STIM for the purpose of furthering their work with industry.** The Institute now utilizes these schools to provide some of its courses. STIM gives them curricula and helps them acquire instructors and get the courses started with industry. This year STIM has a budget allocation of just over $200,000 to provide its courses through these schools.

There is an area vocational-technical school (AVTS) administration director located at the Institute, who directs and coordinates upgrading and retraining activities through the eight area vocational-technical schools in west Tennessee. This gives the schools more autonomy and more flexibility in terms of funding, scheduling, equipment, and programs. It also enables the Institute to take strong leadership in contributing to the state's economic development efforts. To date, approximately twenty such programs, responsible for training 400 employees, have been set up in less than one year's time.

Because of its proactive stance, the Institute does not generally wait for economic development opportunities to happen. Instead, it has sought involvement with such organizations as the Black Merchants' Association, the National Business League, and the Tennessee Valley Center. All of these organizations have affiliations with the small business community.

Other linkages have been developed with such groups as the local branch of the American Society for Training and Development, the Tennessee Technical Educational Association, and the Tennessee Vocational Association. Lastly, STIM has developed linkages with such CETA activities as the Summer Youth Program, the Career Awareness Program, and the Skills Training Improvement Program.

Institute Structure for Upgrading and Retraining

The Business, Industry, and Government (B.I.G.) Division

STIM established this separate division to be responsible for developing linkages with business, industry, and government agencies (city, county, state, and federal), in order to cross-train and upgrade workers. B.I.G. training provides regular college credits for catalog courses and/or courses designed to meet the needs of professional and industrial groups. The division has the flexibility to provide whatever training is needed, where and when it is desired, at a minimal cost.

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*Personal interview with Gary Rowe, B.I.G. Coordinator for Business, State Technical Institute at Memphis, 1 June 1982.

**Personal interview with Charles O. Whitehead, President, State Technical Institute at Memphis, 2 June 1982.

The division also offers two specialized programs: (1) transportation and traffic management and (2) applied credit and collection management. With regard to the latter program, STIM has been granted approval by the National Association of Credit Management to offer certified courses leading to the Associate Award of the National Institute of Credit.

STIM established the B.I.G. Division to deal with its stated mission to provide upgrading, cross-training, and retraining for local industry. The head of the division relates the objective concisely: "Our product is training; our client is business and industry. We try to serve them as a business rather than as an educational unit, yet we keep one thing in mind: everything we do has to be educationally sound."*

Under the general supervision of the dean of evening and special programs and in coordination with the dean of instruction, the B.I.G. Division head has a number of important responsibilities. The major ones are as follows:

- To respond to training needs by submitting proposals to business, industry, and government agencies in order to assist in cross-training and upgrading of personnel
- To maintain close liaison with other instructional divisions to expedite course development and staffing
- To ensure that any training project falls within the Institute's role and scope
- To assist coordinators in evaluating instruction
- To maintain external contacts in order to keep current with clients' needs
- To develop plans for future needs for personnel, space, and budgeting requirements
- To ensure that part-time instructors are given necessary orientation for courses, both on and off campus

Each of the three functional areas of the B.I.G. Division is served by a coordinator, whose role is to maintain liaison with business, industry, or government organizations and agencies. The following major duties of the industry coordinator are typical of the responsibilities in the other two areas as well:

- To assist the agencies in developing training programs needed to maintain present levels of employee proficiency
- To assist agencies in developing supplemental instructional programs for upgrading employees
- To develop course outlines in conjunction with the relevant instructional division head in order to meet the needs of the agencies
- To coordinate the use of on-site training facilities whenever possible
- To ensure that ongoing courses and instructional evaluations are performed

*Personal interview with Carol McAuliffe, B.I.G. Division Head, State Technical Institute at Memphis, 2 June 1982.

- To assist in recruiting instructors in outlying areas
- To maintain necessary contacts with professional and industrial societies in order to be aware of new technological developments
- To assist in data gathering for periodic training needs assessment
- To maintain complete records of all courses conducted witnin the area of responsibility

Several advantages for industry are inherent in B.I.G.-operated training. These include—

- a savings in training costs;
- the provision of consultation and needs assessment, usually at no cost;
- tailor-made courses taught at the employee level;
- the granting of college credits to employees for completed courses;
- a savings in time and transportation when training is provided on site.

The Institute also benefits from these training efforts for industry. Full-time faculty who teach courses along with part-time personnel from industry often develop a broader outlook on their field. The exposure keeps instructors abreast of the latest developments, techniques, and equipment. Since training usually means pay raises and/or promotions for the students, they too are apparently more motivated in these settings.

By thus addressing its responsibilities in cross-training and upgrading employed people, STIM participates in retaining a trained work force in the region. At the same time, the specialized B.I.G. training serves as a built-in student recruiting tool for the Institute. Many persons who receive training on the job later come to the campus for degree programs. Through contact with business, industry, and government organizations, the Institute's training programs also open doors for the job placement of many students and graduates.

Staff members in the B.I.G. Division spend much time following training leads from a variety of sources. Because the current economic slowdown has caused many small industries to use educational services in efforts to survive, the Institute is literally "on the scene" as rapidly as possible whenever a possible need is evident. The Institute's flexibility is evident in its efforts to teach courses at practically any time and at most any location in west Tennessee.

In addition to the proactive stance of the Institute, industry management staff members responsible for training are invited to review the Institute's catalog and describe to B.I.G. representatives the kinds of courses they feel their company's employees need. In a reactive mode, the Institute's representatives then help weigh "the want against the need." The B.I.G. staff members spend much time planning workshops, seminars, and courses throughout the region.

According to the data from the STIM's Admission and Records Office, the B.I.G. Division has been extremely active during the past few years (see figure 17). Between 1975 and 1980, more than nine thousand people in the west Tennessee area received special training through the B.I.G. Division. That figure is now over sixteen thousand. Recipient organizations range from small business operations to major national corporations.

	Fall 1979–Summer 1980	Fall 1980–Summer 1981	Fall 1981–Spring 1982 (interim report for three of the four quarters)
Total Courses Offered	155	223	119
Students Served	2,350	3,303	1,596
Industries and Associations Served	71	70	40
Nonduplicated Training Sites	49	53	35
Fields of Study			
Engineering	47	56	not available
Computer Technology	17	15	not available
Business Technology	60	101	not available
Related Studies	31	51	not available
Total Instructional Staff	77	94	54
Full-time instructors	23	29	15
Part-time instructors	54	60	38
Lab technicians	–	5	1

Figure 17. Data for STIM's B.I.G. Division

B.I.G. linkages to other areas. A program of this type obviously cannot operate in isolation. The B.I.G. Division is an integral part of STIM and, as such, works closely with other areas. For example, when the B.I.G. Division head compiles a list of companies desiring training, the list is formally and informally communicated to other Institute areas.

Linkage to the specific units in the relatively new Institutional Outreach area is particularly crucial, as is coordination with the admissions office, the business office, and the bookstore. Articulation nevertheless does not come instantly or automatically; it has to be continually nurtured so that the division does not get "out of sync" with the rest of the institution. One of the problem areas, for example, has been audit control and audit tracking (i.e., making certain that the audit numbers reflect the current quarter in which the fees are reported). The division works closely with the admissions and business offices to make sure fees are recorded and kept up to date on the proper forms and in the proper quarter. This could otherwise be a problem, as B.I.G. training does not necessarily follow the Institute's regular quarters calendar.

Other Key Division/Area Involvement

As illustrated in figure 13, the Institute's major administrative responsibilities rest with the staff members who are directly accountable to the president. The dean of evening and special programs, the dean of instructional affairs, and the director of administrative affairs head the three offices that relate most directly to external training operations.

The B.I.G. Division falls within the domain of the Evening and Special Programs area (refer to figure 14). Evening and Special Program instruction relates closely to the office of the dean of instructional affairs (refer to figure 15). In addition, the Institutional Outreach units for industry, business, and government that work closely with B.I.G. are under the supervision of the director of administrative affairs (refer to figure 16). All of these areas operate in an interlocking fashion in order to promote the mission of the Institute.

Evening and Special Programs (ESP). The objective of the ESP area is "to provide the adult community with credit courses designed to advance the occupational value of those currently engaged in full-time employment and to prepare for employment of those not yet in the labor force."*

The ESP area offers a continuous program of study from 7 a.m. to 11:30 p.m., Monday through Friday, and from 8 a.m. to 4:30 p.m. on Saturday. While the majority of evening and Saturday classes are taught by full-time faculty, qualified part-time instructors from business and industry also are utilized. All associate's degrees and associate of applied science programs offered are available both day and evening. Entrance and graduation requirements for evening students are the same as for those enrolling in the day program.

The Institute has also developed a Weekend College. Friday evening and Saturday classes are offered for all students, but are specifically tailored for those whose work hours make it impossible to attend at any other time. These course offerings usually require only one night or one day of attendance per week for each course taken in order to satisfy the number of quarter hours of credit. Each course session requires from three to eight hours of attendance. Therefore, a student enrolled in Weekend College is able to take a maximum of two or three credit courses by attending both Friday evening and Saturday classes.

In addition, the ESP area is responsible for extension classes. These classes are offered periodically at various locations (and through various media) off campus. The programs enable students to complete a portion of their requirements at a more convenient location before having to attend classes on campus.

Instructional Affairs. The Instructional Affairs area is under the supervision and leadership of the dean of instruction, who is responsible for coordinating the development, implementation, and improvement of the instructional programs. These responsibilities also include the support areas that provide resource materials and assistance in learning, as well as faculty development.

The instructional programs are divided into four areas: business technologies, computer technologies, engineering technologies, and related studies (i.e., courses in English, mathematics, and social science).

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*Personal interview with William E. Saul, Dean of Evening and Special Programs, State Technical Institute at Memphis, 2 June 1982.

Administrative Affairs. The section of the Administrative Affairs area that is *most* relevant to the upgrading and retraining mission is the Institutional Outreach area, which includes industrial, business, and governmental outreach. This relatively new program at STIM was organized in November 1981. The area head defines the area's role in broad terms, noting that it is responsible for generating contacts with the public, prospective students, businesses, and industries.* She and her staff respond to outside requests for guest speakers at the Institute, and participate in trade shows, high school activities, fairs, and the like. Their responses include active recruitment in high schools, appointments with industries, and organization of on-campus functions. The area also serves as a liaison between training, placement, and cooperative programs.

The Institutional Outreach area works closely with information from the B.I.G. Division (mainly with B.I.G. contact lists) when calling on companies and determining whether or not interest in specific training exists. When a company is ready for referral, the Institutional Outreach staff members call this to the attention of the B.I.G. head, who in turn assigns the follow-through to one of the coordinators. It should be stressed that when an Institutional Outreach staff member talks to a company, he or she discusses the whole range of programs available on the campus, not just customized training services. External outreach is currently focused on companies with at least 200 employees; however, at some time in the future the staff in this area also plan to begin contacting companies with 100 employees or less.

Other relevant areas. The Institute conducts several other programs that relate either directly or indirectly to upgrading and retraining. These include—

- **The Servicemen's Opportunity College.** In recognition of the problems confronting many active-duty servicepersons in meeting their educational goals, STIM has joined the Department of Defense and individual military services in becoming a Servicemen's [sic] Opportunity College. The program includes granting credit for correspondence courses, examination programs, service schools, and even service experience where there is a credit relationship between training already acquired and the technology being pursued. STIM maintains an office at the Memphis Naval Air Station for the program.

- **The Navy Campus for Achievement (NCFA).** As part of STIM's effort to serve the total community (including the U.S. Navy—the largest employer in southwestern Tennessee) the Institute has joined other two- and four-year certificate and degree-granting institutions as participants in the NCFA program. The program involves a standard letter of agreement between the navy student and the participating school. The agreement provides for the evaluation of and credit for nontraditionally acquired knowledge and the acceptance of transfer credit earned at other institutions.

- **Cooperative Education.** Cooperative Education is a program in which the Institute and the local business community combine efforts to provide students with relevant training experiences. The co-op program combines the lessons of both the school and work environments. It helps students see the relationship between their classroom work and their future occupations.

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*Personal interview with Sheila Merritt, Director of Instructional Outreach, State Technical Institute at Memphis, 1 June 1982.

Regular Technical Education for Occupational Advancement

The Institute is responsive to business, industry, and government organizations in many ways. Much of the upgrading and retraining that is offered on campus is through regular degree programs, including the following:

- **Associate of engineering (A.E.) degree.** This program is offered in the following ten engineering fields: architectural, biomedical, chemical, civil, computer, electrical, electronic, industrial, instrumentation, and mechanical engineering technology.

- **Associate of science (A.S.) degree.** This program is offered in the following science and business fields: business data processing, computer accounting, computer science, general technology, mid-management technology/banking, mid-management technology/general, midmanagement technology/industrial, motel/restaurant management, and vocational-technical education.

- **Associate of applied science (A.A.S.) degree.** This program is offered in the following engineering and business fields: building construction technology, business technology/accounting, computer operations technology, electronic technology, and mechanical technology.

- **Associate of independent studies (A.I.S.) degree.** The Institute provides a degree path for those whose work schedules, geographic locations, or home responsibilities prevent them from pursuing traditional coursework, but whose employment background and nonclassroom experiences indicate they have met (or could meet) many of the same course requirements as the A.S. or A.E. graduates on an independent study basis.

Regular catalog courses. Scores of relevant courses are available for adult workers. A brief perusal of the most recent catalog indicates that the following regular courses are offered (the number of related courses is shown in the parentheses):

A.A.S. degree-related courses in reading, communications, and mathematics (7)

Architectural engineering (18)

Biology (4)

Biomedical engineering (10)

Building construction (20)

Business technology/accounting (16)

Chemical engineering (17)

Civil engineering (17)

Computer accounting (21)

Electronic technology (21)

English (7)

Industrial engineering (12)

Instrumentation engineering (8)

Mathematics (10)

Mechanical engineering (17)

Mechanical technology (20)

Mid-management technology/banking (16)

Mid-management technology/general (6)

Computer engineering (10)

Computer operations (14)

Data processing (26)

Electrical engineering (13)

Electronic engineering (13)

Mid-management technology/industrial (12)

Motel/restaurant management (20)

Physics (6)

Social science (8)

Vocational-technical education (18)

CUSTOMIZED TRAINING PROGRAMS AT STIM

Staff members at the Institute have been extremely prolific in developing customized training programs for upgrading and retraining adult workers. Indeed, the word "tailored" is used frequently in the dialogue between the Institute and its potential clients.

The following customized training programs represent only a few ways in which STIM has responded to the training needs of local employers. One major program is in the private sector and the other is in the public sector. Several other programs are also briefly discussed in order to illustrate the diversity of the Institute's activities.

International Harvester (IH)*

The relationship between International Harvester and STIM started off several years ago on a limited basis with fourteen apprentices ranging from tool and die workers to plumbers. Although IH conducted some of its own courses, the company was not totally satisfied with them. Since the instructors were "good people" but were not teachers, there was no uniformity in the instructional approach. IH therefore contacted STIM and worked out an arrangement by which the apprentices could work on uniform curricula. In the beginning, even though the courses were not customized, STIM coordinators and instructors recognized IH's situation and were able to "key the courses" toward specific needs.

Originally the students attended classes on campus. The classes were set up at the time the company needed them (i.e., at 7 a.m.). This initial scheduling flexibility was extremely helpful to IH since the company could only pay the apprentices for an eight-hour day. (In later courses, the time was set at either 7:30 a.m., 8:00 a.m., 1:00 p.m., 1:30 p.m., or 4:30 p.m., depending on the work shifts.)

The company's tuition reimbursement policy reimbursed workers who completed a work-related course (i.e., if the course was required by the company, IH paid the Institute; if the course was voluntary, the employees paid the Institute).

*Prior to its recent closing, the International Harvester plant in Memphis was a major client of the Institute. It was extremely disappointing for STIM to learn of the closing of the plant. Although the cooperative program is no longer in effect, it illustrates the approaches taken by the Institute.

Through experience, the company learned that while many workers wished to take classes, the drive from IH to the school was a long one, especially after a full day's work. By having the instructors bring the courses to the company, IH was able to open up more classes. The Institute was thus able to accommodate personnel on all work shifts.

Accommodation occurred in several other ways. For example, the company chose to call the basic automotive electronics course "Electronics Trouble Shooting" in order to reflect its specific applicability. The students actually did "troubleshooting" on a cotton picking machine in the classroom and laboratory. Several supervisors took the course and were then able to work with additional employees. The initial instructor adapted very well to the situation, as did other instructors later on. As a result, several instructors were asked to return. In one case, an instructor was even hired by the company. (The Institute was supportive of this, for although it left STIM with one less faculty member, it strengthened relationships with the company.)

The company also had a role in selecting instructors. Normally a potential instructor visited the plant one or more times, met several company department heads, and tried to determine specific training needs. In one instance, an instructor who did not work out well was replaced. While this did not happen often, the company was pleased with this demonstration of STIM's flexibility.

The company's training manager sincerely feels that the Institute is "very practical."* In fact, STIM's overall excellent reputation for its hands-on approach to training was an important aspect that sold International Harvester on STIM's services. Another factor was the Institute's response time. Whereas response time naturally depends on the situation, STIM was usually able to react very quickly. IH often contacted the Institute when there was a quick need to "fight a fire." In one case, a training program was put together in just under two weeks. In most cases, however, the process took somewhat longer. The company usually started with a basic idea of what it wanted and then explored further ideas with the Institute. STIM, in turn, provided a course outline and suggestions for the curriculum to be offered or adapted. IH was very satisfied with this arrangement and with the amount of input it had. It also saw the tailoring of courses to fit company needs as a primary reason for the success of the working relationship between the two organizations.

Because the bulk of the IH courses were taught on-site, much of the courses' equipment came from the company. However, this depended on the particular course. In some of the measuring devices classes, company equipment was used. In electronics classes, particularly those in laboratory situations, the Institute transported equipment to the site in a mobile trailer.

Overall, the company appears to be very satisfied with the program. The training manager, in fact, puts it this way: "I think if I were a training director at a new company, I would start up with State Tech."* He sums up the flexibility of the Institute in this manner:

> If I have a class that fits their curriculum, fine. If I have a class that needs to be changed a little bit, they'll change it a little bit. If I need a class designed for me, they will do that. If I'm on a short-notice situation, they are flexible. If I need a class held in my facility, they'll do it. I've had classes that I wanted held on particular days; they'll arrange that. I've wanted one [class] held three days in a row; they arranged it. I think if I could get cooperation from everyone like them, I'd be extremely happy.

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*Personal interview with Ed Hatcher, Training Manager, International Harvester Corporation, 2 June 1982.

*Personal interview with Ed Hatcher, Training Manager, International Harvester Corporation, 2 June 1982.

Examples of some of the courses the B.I.G Division offered IH in the last five years included Assertiveness Training for Supervisors, Management Seminar/Stress Management, Blueprint Reading and Measuring Instruments, D.C. Circuits, Introduction to Electronic Technology, Basic Automotive Electronics, Engineering Drawing, Labor-Management Relations, Basic Hydraulics, Metals Technology, Trigonometry and Geometry, Physics of Mechanics, Quality Control Instruments, Basic Technical Math with Calculus, and Fortran Programming for Technicians.

Memphis Light, Gas, and Water Division (MLGW)

The Memphis Light, Gas, and Water Division (MLGW), part of the city government, has a training department that is divided into three areas: management development, field training, and general training. The B.I.G. Division has conducted training programs for all three areas, including a professional supervisory training program, technical courses in mathematics and electricity for apprentices, job instructor training, maintenance training, communications, blueprint reading, and oral communications.

MLGW opened a new training facility in late 1982 and anticipates that B.I.G. training will provide 60 percent of the courses offered at the new facility. Approximately 90 to 120 students attend B.I.G. classes at MLGW each quarter, depending on training needs. One of the major programs developed cooperatively to train secretarial/clerical staff, support staff, and management personnel is the Potential Supervisor Training program. The two organizations have been working on this program for about two years. Recently the employers became aware that there are not enough females in upper- and midlevel management. The program will therefore be conducted again, this time primarily for women.

The Institute has provided mathematical and electrical training as part of an apprentice training program. Other programs in areas such as transportation are also being developed. To date, however, one of the most significant program for apprentices has been in basic electricity.*

Originally, MLGW had its own in-house basic electricity course, but decided to have STIM assess it to see how it compared to the Institute's course. The two courses apparently were almost identical. As a result, the apprentices now receive college credit for the in-house course.

As a follow-up to these linkages, the Institute has evaluated MLGW's entire apprentice program. One of the most positive results is that apprentices now have an incentive to continue their training. They receive this incentive in the form of college credits that lead to an associate's degree.

STIM also has offered job instructor training ("training of trainers"). The Institute took a special, noncatalog course and developed it for trainers. The course taught MLGW trainers how to teach new employees, what methods and materials could be used, how to develop lesson plans, how to operate audiovisual equipment, and so on.

MLGW actively encourages its employees to take courses at night. The company has a tuition reimbursement program that makes it possible for workers to receive training at very low cost. One such night course in air conditioning and refrigeration (beginning and advanced sections) has a participant waiting list. The Institute provides the instructor and MLGW provides

*It should be noted that if a course is not under the jurisdiction of the Joint Apprenticeship Training Committee, it can be offered either in-house or through STIM.

all the necessary heavy equipment and supplies. STIM also uses its own simulators, but the training lab itself is equipped by MLGW.

With regard to tuition reimbursement, MLGW supplies STIM with a letter stating that MLGW will pay tuition and textbook costs for whatever courses the Institute is going to teach. The STIM business office then bills MLGW at the end of the month for the costs of tuition and texts. This apparently works better than having MLGW employees pay their own tuition and then have to worry about having the money reimbursed.

MLGW believes it has an excellent working relationship with STIM and expects this relationship to blossom further when the new training facility is more fully utilized. In anticipation of this, MLGW and STIM are planning a course on the national electrical code. In fact, there may be as many as six classes offered.

MLGW also has a high opinion of the Institute's responsiveness. As the superintendent of field training states, "If it's not in the catalog or course description, if it's not quite what we need, they are willing to put a course together that fits our needs and [that is] accredited at the same time."* If a course is not within STIM's role and scope, the Institute will put MLGW in touch with a local institution that offers it. In some cases, MLGW has made use of these referrals, but generally still finds it more economical to work directly with STIM for training.

In addition, MLGW recognizes that the courses offered by STIM are in no way "watered down." While some of the technical preparation is adapted, the courses themselves are college-level training courses, fully comparable to those on campus. Customized courses have the same attendance requirements for students and the same instructional requirements for faculty.

In attempting to summarize the reasons for successful collaboration, the superintendent of field training puts it this way: "[There is] a mutual respect and understanding to start with . . . and a willingness on the part of the Institute to design a program that will satisfy our immediate training needs. If they don't have one on the shelf that fits, they will tailor-make one."*

Other Customized Training for Business and Industry

American Hotel/Motel Association

In partnership with the Memphis Metropolitan Chapter of the American Hotel/Motel Association, STIM has scheduled selected hospitality management courses. The courses, designed to increase hotel/motel managers' technical knowledge and competency, are approved and certified by the Educational Institute of the Association. Upon successful completion of each course, participants receive a certificate of completion from the Association and two college course credits from STIM. The courses offered to date have included Human Relations-Supervisory Development and Hotel-Motel Sales Promotion.

Small Business Delivery System

Because of the growing importance of training for small business management, the B.I.G. Division is working to provide a forum for sharing information, exchanging ideas, and developing contacts among various groups involved in serving the local small business community. The

*Personal interview with John Furmanski, Superintendent of Field Training, Memphis Light, Gas, and Water, 2 June 1982.

general purpose of the system will be to provide small business management training, consulting assistance, and technical services. One of the primary courses to be offered will be Fundamental Small Business Management, which will deal with such topics as financial controls, inventory management, risk management, personnel, and sales.

The "cluster program" will be part of this system. It will offer management training at various business locations. The training program, which will require a minimum of fifteen business participants, will use a team of consultants who specialize in selected areas. Training will focus on practical application of successful management techniques. Specifically, the program will include such topics as advertising, preventing crime, and general management. STIM's role will be to offer classes in promotion, advertising, and marketing. A summer program will include courses in accounting and money management and in the fundamentals of retailing.

American Management Association Extension Institute (AMAEI) Program

As part of the continuing effort to bring training to managers, the American Management Association Extension Institute has established a cooperative effort with a number of two- and four-year institutions across the country. STIM is one of the cooperating institutions. The following courses have been recently incorporated into the AMAEI program at STIM: Accounting for Managers, Computer Basics for Managers, Communications for Managers, A Manager's Guide to Human Behavior, What Managers Do, How to Build Memory Skills, and Leadership Skills for Executives.

Memphis Area Credit Executives (MACE)

MACE members are business credit grantors in manufacturing, wholesaling, service industries, and financial institutions. There are over 290 MACE members in west Tennessee. The STIM summer course program for MACE includes the following courses: Economics, Credit Management Problems and Cases, Principles of Credit Collection, Advanced Credit Analysis, Principles of Accounting, and Business Law.

Harmon Industries

This Bolivar, Tennessee company manufactures rearview mirrors for the automobile industry. The company determined that its employees needed additional training in the area of hydraulics maintenance. The B.I.G. Division provided an instructor and lab technician in hydraulics at the Harmon plant for ten weeks. The training resulted in considerable improvement in the company's product (i.e., a notable reduction in fluid losses—a matter that had been a problem in the past).

Companies with Ongoing Training

Several Memphis companies have developed a continuing linkage with the B.I.G. Division for the following courses:

• Kellogg:	Fundamentals of Maintenance Blueprint Reading and Drafting
• Memphis Publishing Company:	Human Relations What Managers Do
• Universal Life Insurance:	Introduction to Cobol What Managers Do
• Methodist Hospital (summer program)	Microcomputers Personal Finance

Customized Training for Government Agencies

City of Memphis

The B.I.G. Division has conducted training for almost all areas of the city government through a central training office at Memphis City Hall. Courses offered include management training, technical training, and data processing courses. Both specially designed and regular catalog courses have been offered.

Shelby County

The B.I.G. Division has provided specific courses for various offices of the county government such as real estate appraisal training for the County Tax Assessor's Office as well as various administrative and data processing courses.

Shelby County Correction Center

The B.I.G. Division has delivered training courses for the inmates and staff of the Shelby County Correction Center. Courses for the inmates were coordinated through the Corraction Center's counseling department and were part of a CETA rehabilitation grant. The training included human relations, basic math and English courses, and other STIM catalog courses.

Shelby County Health Department

The B.I.G. Division has offered training for county health department personnel in institutional sanitation and medical terminology. This training is ongoing on a seasonal basis.

The Defense Depot

This facility includes three federal agencies at one location: the Defense Depot/Memphis, the Defense Industrial Plant Equipment Center, and the Defense Property Disposal Region. All utilize B.I.G. courses. A number of courses have been offered at the Depot. Recently a special training program for midlevel managers was established (the Professional Development program.) It is

based on the midmanagement degree program in the STIM catalog, with the addition of special courses in transportation offered through B.I.G. The division's specially designed training courses and seminars fit the mandated training for various GS-level government personnel.

U.S. Naval Air Station, Millington

The B.I.G. Division has offered catalog and specifically designed courses through the U.S. Navy's Office of Civilian Personnel. Through this effort, the Naval Air Station's maintenance department utilizes specially designed technical courses to cross-train and upgrade personnel in electronic controls, glazing, and various technical subjects.

U.S. Army Corps of Engineers

The Federal Women's Program and the U.S. Army Corps of Engineers have collaborated with the B.I.G. Division to offer college credit courses during flextime lunch periods, with the objective of enabling more federally employed women to be upgraded to midmanagement positions. Emphasis is on civil engineering and data processing. Catalog courses in math and accounting have been offered, as well as specially designed courses in management.

CETA Preemployment Training

The Job Preparatory Training program, conducted under the auspices of CETA, was a short, twenty-hour program held at the Memphis Opportunities Industrialization Center from 8:00 a.m. to 4:00 p.m. for one-week periods. The program was designed to provide instruction in practical procedures on how to seek employment.

Transportation Classes

Specialized courses in transportation and traffic management are offered on campus and/or to industry at their site (although all courses to date have been held on campus). Courses offered to the local transportation industry are designed to cross-train and upgrade individuals already employed in the field. Subjects offered include motor carrier rates, international traffic management, physical distribution, freight claims, principles of transportation, transportation law, and warehousing.

Other Federal Training Programs

The National Weather Service makes extensive use of computers for storing and compiling information. The B.I.G. Division has provided training at the Weather Service in data processing.

The U.S. Post Office has utilized the special course capability of B.I.G. in providing data processing training for managers.

The Internal Revenue Service's Service Center has utilized the B.I.G. Division to deliver catalog courses in accounting, business skills, and human relations to employees at the training department housed in the Center.

OVERVIEW OF PROCESS FOR DELIVERY OF UPGRADING AND RETRAINING

Linkages, Marketing, and Information Exchange

The Institute's primary motivating force in delivering upgrading and retraining for business, industry, and government is its total institutional commitment to supporting local and state economic development. All members of the STIM staff understand that making and maintaining crucial linkages with private and public organizations are a major part of their mission. The top administrators of the Institute actively reinforce this commitment, which stimulates the Institute's proactive approach in serving industry needs. When the objective is clear and the priority high, faculty members have no trouble knowing what to do, and many staff members contribute enormous amounts of effort in establishing two-way bridges between the Institute and the community.

As mentioned earlier, two institutional structures have been established for the specific purpose of creating and facilitating critical ongoing linkages: the B.I.G. Division and the relatively new Institutional Outreach area. The administrators of these units work with the president and department deans to meet the training needs of the community. From these efforts, the Institute has gotten to know the community very well, and the community has become increasingly aware of what STIM has to offer.

Methods of Communication

There are a variety of avenues of communication, both formal and informal. Staff members in the newly established Institutional Outreach area call upon companies to make them aware of the B.I.G. Division and to explore cooperative education and placement prospects for students. Because the Institute has a successful history of training for industry and is well established in west Tennessee, STIM receives numerous callbacks from industry. Many companies already know about the Institute. There are some, however, who are not fully aware of STIM's role and scope. The function of the new Institutional Outreach area, therefore, is both service and sales.

Whenever the need arises, STIM mails out brochures, flyers, or announcements of a particular technical or managerial course. The mailings are generally targeted to the industry segment for which they are most relevant.

Many Institute staff persons are active in such groups as the Industrial Personnel Council, the Society of Mechanical Engineers, the Mid-South Association for Training and Development, and similar professional organizations. Their involvement in these organizations serve as a means both of communicating knowledge about STIM and of assessing training needs.

Another resource for joint communication is the Small Business Institute program discussed earlier. In fact, the cosponsors for this group have kept the B.I.G. coordinators alert to many of their needs. The Service Corps of Retired Executives (SCORE) has also served in this fashion, as have the advisory committees for the various technology training programs found on the campus. Because of their contacts with industry, all instructors are salespersons for potential training as well as assessors of training needs.

Program Design and Delivery

Needs Assessment for Upgrading and Retraining

In terms of *direct* needs assessment, the B.I.G. coordinators are the central persons who go to a potential client and analyze the training needs of employees. One of the major approaches for assessing training needs (e.g., those in small businesses) involves being aware of very specific local problems. With this information, B.I.G. training developers design courses to respond to very specific needs (e.g., how to prevent local businesses from failing). Over the past few years, the B.I.G. Division has built up a library of information from all over the country on successful training programs. Thus the division is able to draw upon information about many kinds of training needs and curriculum resources as its staff develop or adapt their own courses.

Gary Rowe, one of the B.I.G. coordinators, summarized the process in this way:

> In effect, we will visit a company and will work with them to analyze their training needs. We will look initially at the current level of personnel and at the level to which the company wishes to raise the personnel. . . . We will find out the number of employees, the strategy of the company, and so forth. More importantly, we will determine what the company's goals are, where they want to go, and the steps that it will take to get them there.*

An example of this process is in assessing training needs for advanced data processing, an area that cannot be taught effectively unless workers have the basic mathematical foundations on which to build the other skills. When STIM staff members find that a company's employees are deficient in math skills, they go back to the basics and build from there. The Institute does not try to be "all things to all people," but instead tries to find out what is needed to teach the employees and to bring them up to the desired level of knowledge.

The Institute administrative staff feel that much of STIM's success is due to the fact that during needs assessment, staff members take pains to analyze the level of student expertise and build upon it. Several STIM leaders have emphasized this role for their instructors.

The Institute does not use a formal needs assessment survey, yet it gets the job done. Experience shows that a company generally knows what it needs, but is usually open to other suggestions and ideas. The B.I.G. Division then suggests a class outline or a curriculum. With this, a dialog ensues between the Institute and the company. The company has a great deal of input. Sometimes a catalog course is exactly what is needed, but even then, STIM staff members are careful to listen and suggest, and not dominate or dictate. This informal approach to needs assessment has worked well for both the Institute and its clients.

Training Agreements for Customized Programs

In most cases, there is not a formal training agreement between a company and STIM, although there may be a letter of understanding relating to payment procedures. However, in start-up training funded through the Tennessee Industrial Training Service, a contract is drawn between ITS and the Institute. It must be signed by the company involved in the training, the Institute, and ITS, as well as by several other state officials, including the governor.

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*Personal interview with Gary Rowe, B.I.G. Coordinator for Business, State Technical Institute at Memphis, 1 June 1982.

Course Development

Curriculum development is an ongoing activity. From time to time, this activity is a responsibility of all full-time instructors, who may be given a nonteaching load for one quarter in order to develop one or two courses. Also, the two full-time instructors in the B.I.G. Division adapt or develop special courses for industry.

According to the head of the B.I.G. Division, nearly all courses provided for industry, including regular catalog courses, are somewhat tailored. However, because the Institute does not wish to interfere with course sequence, the tailoring is very focused (i.e., courses are carefully adapted to particular situations and student levels).

The basic "rule of thumb" is that the Institute tries to find an instructor with the expertise to make adjustments (albeit minimal ones) within the course. If the company's needs require adjusting standard courses beyond the maximum of 10 percent change, the Institute compensates the instructor either to revise the course or design a new one. The head of the B.I.G. Division notes that "if we are using a catalog course number, we must stay within 90 percent of that curriculum; if we find the company's needs do not fall within that area, we have to get another course number and title to do the training."*

A prime example of the customization process is the Blueprint Reading course developed for International Harvester. A needs assessment determined that although special expertise was needed on the use of measuring instruments, this need for expertise was not enough to warrant a special course. The specific content was therefore integrated into the basic Blueprint Reading course. As the head of the B.I.G. Division explained, "Since we could not use the regular course, we went to a special course which had 60 to 70 percent of the basic Blueprint Reading course. However, we enriched and designed the course to meet the employees' needs; namely, to learn how to read and use measuring instruments."*

Another example is the Cobol Programming course. When taught on campus, IBM equipment is used; when taught on site (even though 90 percent of the content is intact), the instructor adapts it to the available equipment. Still another example of customization is the incorporation of basic mathematics instruction into such courses as Data Processing, Statistics, and Quality Control.

Usually two to three weeks are required to set up a tailored course. This varies depending on the instructor's experience, the resources available, and the nature of the services needed. Sometimes it takes less than two weeks and sometimes, when data on needs must be gathered (as in the case of the Memphis Area Credit Executives), it may take a month or two.

Lastly, when courses are customized, state guidelines regarding credits, classroom, and laboratory time are followed explicitly. Standards are carefully retained for all customized courses.

Funding and Budget

In January 1982, a pricing policy memorandum (see figure 18) was submitted to the personnel in the B.I.G. and Industrial Outreach units. Both STIM and the companies served

*Personal interview with Carol McAuliffe, B.I.G. Division Head, State Technical Institute at Memphis, 2 June 1982.

MEMO

The basic policy for pricing shall be—

1. Rate per student credit hours = $9

Example

Pricing will be for a minimum of 15 students

2 quarter hour course = 2 x $9 x 15 students = $270

Example

20 students for a 2 quarter hour course

2 x $9 x 20 students = $360

To be added to the above

2. Books and supplies not normally furnished by STIM.

3. Travel costs of the instructor, if the course is off campus. (Variations from this pattern require approval of the dean of evening and special programs.)

Figure 18. Pricing Policy Memorandum for STIM's B.I.G. Division and Industrial Outreach Area

generally agree that the cost of training provided by the Institute often is less than the cost of an in-house program.

In a nutshell, a company compensates the Institute for the number of persons taught and the credit or contact hours. The actual payment method varies according to the individual company's policy. Sometimes a company pays tuition costs directly. In other cases, a company has individual employees pay their own tuition; after the employees complete the course, the company reimburses them. The STIM business office is flexible and will accept payment in a number of ways (e.g., through a purchase order, letter of agreement, or sometimes on a contract basis).

With regard to financial arrangements with STIM, the companies' policies vary, as the following examples illustrate:

- International Harvester (IH) generally followed a tuition refund policy; that is, the employees paid STIM and the company reimbursed them. In addition, IH had several courses in Management Development conducted for which it paid directly. The method of payment depended on the course. Normally if a course was required by the company, the company paid STIM; if a course was voluntary, the employees paid.

- The Memphis Light, Gas, and Water Division normally follows a tuition reimbursement program. The Institute has found that it is simpler for MLGW to give STIM a letter stating that it will pay for the cost of tuition and textbooks and then allow the STIM business office to invoice MLGW at the end of the month.

- The Kellogg Company also has a dual approach. For one group (maintenance people), the company paid for the course and paid the employees for the time spent in the course. For another group in the technical area, Kellogg paid STIM directly.

Sometimes the Institute works with a company and contracts on a cost-recovery basis. STIM figures out a program's costs, using a formula based on the nature of the program and the amount of money that STIM must spend on it. In most cases, the standard $9 per hour charge covers neither the cost-recovery expenses nor the amount accrued in tuition. In such cases, state funds subsidize the difference.

Another policy of the Institute is that if a company has at least fifteen potential students, STIM will deliver the training on the basis of the regular tuition rate per student. If the company does not have fifteen people, the rule of thumb is that it still must contract for the cost of fifteen students' tuition. Normally, STIM will write a letter of understanding that explains what the cost to the company will be.

In terms of payments for instructors to teach or develop courses, these resources come from the Institute's general instructional fund. The Institute administrative staff members know at the beginning of a year how much money the Institute has, no matter how many industries it serves. However, if there are additional needs to work with industry, the head of the B.I.G. Division has indicated that additional funds could probably be acquired.

Selection of Instructors

In an article published in *School Shop*, William E. Saul (1979) stressed the need for care in selecting staff for a program such as the B.I.G. operation. He pointed out that in a program

where so much instruction is done off campus, the faculty must have a comprehensive understanding of and prior contacts with the community they will be serving.

In hiring instructors, the Institute follows the Equal Employment Opportunity (EEO) procedures. The head of the B.I.G. Division has indicated that the division normally approaches a particular department first in order to ascertain which full-time staff members have taught a specific course in the past. If an instructor has prior experience, in-depth expertise, and is recommended by the department, the person normally will be selected to teach an off-campus course. Once the instructor is identified, he or she often will visit the company. This step is important, as there is a need for clarification of both the company's goals and the instructor's approach. This orientation with company management also enables the instructor to determine the competency levels of prospective students. While the final approval of an instructor rests with the B.I.G. Division, the company has considerable input into the instructor selection process.

The B.I.G. Division maintains an extensive list of potential external instructors. It also relies to a great extent on company feedback. Because the Institute does not attempt to deliver training beyond its role and scope, the list of potential instructors includes technically qualified people with experience in the field. The overall estimate is that 60 percent of the instructors who teach on-site are full-time campus instructors. For the most part, the remainder of the staff (i.e., part-time instructors) has had previous experience teaching STIM courses. Only about 10 percent of the instructors at any given time are new. They usually are found in very specialized areas (e.g., courses dealing with licensing codes). When such specialized training is offered, the Institute looks for instructors with specific expertise in an area and with experience with a particular type of equipment.

Occasionally STIM selects a company employee to teach a class. However, it will do so only if the person can meet the same hiring criteria as a regular staff person. The criteria, therefore, place great emphasis on hands-on industry experience. (One interesting item is that STIM cannot hire anyone retired from employment, as according to state law no one is allowed to receive two state paychecks.)

One of the primary concerns of the Institute is that instructors keep up to date with technological developments. The Institute, therefore, has set up a return-to-industry program through which every three years an instructor can spend a summer working in industry and continue to receive a regular salary, usually paid in part by the company and in part by STIM. This is becoming increasingly more difficult to do, however, because of the depressed economy. It is also a relatively expensive program, so only a few instructors have been able to take advantage of it during the past few years.

Linkages with business and industry, discussed earlier, are also helpful for instructors. These day-to-day connections with practitioners assist in keeping staff up to date, as do regular contacts with various advisory committees. The relatively high number of part-time instructors also has a positive influence.

In terms of instructor evaluation, students receive instructor evaluation forms at the end of each quarter. The process is optional, however. In some cases, external clients (especially government agencies) will also supply evaluations. This feedback from the outside is helpful in selecting instructors for repeat courses.

Scheduling, Facilities, Equipment, and Materials

Scheduling, for the most part, is not a major problem. The Institute has demonstrated its flexibility in this area and has a well-deserved reputation for flexibility. The only problem (which has apparently already been resolved) has been that businesses and industries often do not operate on the same schedule as the regular academic calendar. Therefore, some "special arrangements" in regards to class scheduling and tuition payment have been worked out internally with the STIM business office so that the training calendar of one group does not conflict with the calendar of the other.

Supplying equipment and materials does not seem to be a problem for STIM. The equipment used in the field depends on the particular class. For customized courses (such as International Harvester's Measuring Instruments training program), companies frequently use their own equipment. At times when electronics classes are scheduled for lab work, the Institute transports its own portable equipment to the particular company. In the past, certain equipment for physics instruction has also been transferred temporarily from the campus laboratory to the field site.

One related problem being encountered by STIM and many other organizations is that equipment and materials must be kept up to date. Obsolescence is an ongoing concern. Therefore, the Institute will sometimes provide seminars or training programs when companies purchase new equipment for use in the field or when the Institute buys it. Updating instructors goes hand-in-hand with updating equipment and materials.

Another problem area has been with computers—not in finding the equipment itself, but in finding the time to use it. The current solution, common to many organizations, has been to extend the computer lab hours to late at night and on weekends.

Evaluation of Courses and Programs

STIM's president notes that in the past year, STIM has served approximately seventy different industries that employ approximately twelve thousand workers. From such statistics, there is little question that the Institute has taken an active role in fulfilling its mission; unfortunately, however, little "hard data" exist on the effectiveness of specific courses and programs.

Nonetheless, there are a number of responses from industry that support STIM's effectiveness. For example, the coordinator of government training in the B.I.G. Division claims a very high degree of success with the management training offerings at the Defense Depot.* Twenty-two persons attended classes through the program for almost a year and improved their skills to such a degree that STIM and the Depot are planning to double the size of the program in the near future.

Other positive feedback received by the Institute includes cases in which STIM graduates have been specially sought out by local employers.

International Harvester's training manager claims that STIM's courses have been primarily valuable in terms of "increasing employees' productivity and improving their attitudes."**

*Personal interview with Kenneth Eaton, B.I.G. Coordinator for Government, State Technical Institute at Memphis, 1 June 1982.

**Personal interview with Ed Hatcher, Training Manager, International Harvester Corporation, 2 June 1982.

Likewise, the superintendent of field training at Memphis Light, Gas, and Water claims that STIM training has had similar positive results. Since it is hard to measure productivity in a service operation such as MLGW, this judgment is based on the percentage of callbacks and reduced number of person-hours needed to do the work.*

Summary of the Process

The B.I.G. Division has listed twenty-one major steps in the delivery of courses taught for business, industry, and government. The list (State Technical Institute at Memphis n.d.) is a useful summary of the process of upgrading and retraining as conceived by the Institute. Because this list is so relevant, it is given here in its entirety.

1. Contact is made with company indicating training interest:

   a. Inquiry calls from companies in response to mail-out literature, advertisement, phone surveys, and word of mouth.
   b. Leads from (external) instructional or STIM staff.
   c. Industrial Outreach.
   d. Industrial Training Service.

2. Coordinator refers to existing company contact files or placement reports in order to check previous contacts with company. Update of information from appropriate outreach department is gathered.

3. Appointment is made with proper company official, i.e., training director, personnel director, plant manager, etc.

4. Coordinator calls on company to provide training information and assess needs. At this meeting, the following information is explored:

   a. Has in-house training occurred?
   b. Nature of training needed?
   c. Level of training?
   d. Catalog course—special tailored course? Prerequisites?
   e. Number of students to be trained.
   f. Site selection—Does the company have proper training facilities?
   g. Time frame for training—short-term or ongoing.
   h. Approximate costs.
   i. Method of payment.

5. Action report is forwarded to Industrial Outreach.

6. Coordination between B.I.G. and the Instructional Department Chairperson begins. Discussion of—

   a. Curriculum adjustment and/or development.
   b. Textbook.
   c. Instructor recommendation.

*Personal interview with John Furmanski, Superintendent of Field Training, Memphis Light, Gas, and Water, 2 June 1982.

7. Textbooks and materials are ordered through the bookstore.

8. Instructor is considered:

   a. Department head recommendation.
   b. Existing B.I.G. instructor.
   c. Emergency hire.
   d. New hire.

   If it is a new hire the following steps are taken:

   - A job description is written and a personnel requisition is sent to the Personnel Department.
   - Interview appointments are arranged by Personnel Department.
   - Interviews are held.
   - A recommendation to hire is made. (Salary must be determined before recommendation is made in case of a new hire or emergency hire.)

9. After the selection of an instructor, several items are determined:

   a. Salary—pay scale.
   b. Travel status.
   c. Teaching load:

      - Part of regular load.
      - Extra pay.
      - Overload.

10. The Instructional Department Chairperson approves the recommendation of the instructor (via assignment card).

11. Course Information Sheet is prepared.

    a. If a new course, a new course number must be obtained from Admissions and Records Division head.

12. Meeting is arranged for instructor to visit company to finalize training. (Optional)

13. Confirmation is made with company to finalize costs, method of payment for course and books, etc.

14. Instructor orientation is conducted:

    a. Contract is signed.
    b. Instructor packet: Catalog-text-rollbook-parking sticker-pay schedule-department policies.
    c. Records to maintain: Class rolls-pay sheets-final grade rosters.
    d. Course outline—Clerical services.

15. Transporting of equipment is arranged.

16. Information sheet is signed, approved, and distributed.

17. Registration is conducted—class starts up:

    a. Coordinator oversees or conducts registration of students.
    b. Memo is written if assistance is needed from ESP Business Office.
    c. Applications are assembled.
    d. Books are checked out of bookstore.

18. Pre-registration is conducted:

    a. On-site registration.

        - Text delivered, sold, or distributed.
        - Student applications filled out and signed.
        - Class given short orientation as to attendance, credit, etc.—questions and answers.

        - Instructor introduced.
        - Instruction begins.

    b. On-campus registration.

        - Room assignment.
        - Parking stickers.
        - On-site steps noted above are followed.

19. Post-registration is conducted:

    a. Registration forms complete.
    b. Company letters for out-of-state students.
    c. Registration to clerk.
    d. Bookstore closeout.
        - P.O.—Cash.

    e. Business Office.
        - Cash—Accounts receivable.

20. Administration of course is attended to:

    a. Student maintenance.
        - Drops, adds, and withdrawals.

    b. Instructional responsibilities.

        - Attendance rolls.
        - Time sheets.
        - Monthly travel.
        - Final grade rosters.

    c. Evaluation of instruction.

21. Company follow-up is conducted:

    a. Insure goals have been met.
    b. Training to continue.
    c. End of training.
    d. Referral to Industrial Outreach.

Additional steps in training conducted for organizations or specific interest groups:

- A mailing list is procured or compiled.
- Mailing labels are reproduced.
- Site selection is made.
- Course announcements are written.
- Instructor search and hiring is conducted.
- Announcements and applications are mailed out.
- Mail-in registration procedure is followed.

SUMMARY

Key Factors in Upgrading and Retraining at STIM

The key factors in the success of STIM's economic development outreach are easy to identify. They are recurring themes: institutional commitment from "top to bottom," aggressive leadership, flexibility, accommodation, and responsiveness. Supported in its efforts by a competent staff, STIM is an institution that has a complex structure but also a clear mission. Thus it is never distracted from pursuing its goals.

STIM clearly pursues its economic development goals in a proactive fashion. The Institute does not merely react to local and regional training needs—it actively seeks to "meet them on their own ground." It does not wait for managers or employees of business, industry, or government to show up on the Institute campus. STIM takes its books, instructors, and whatever else it needs to wherever there is a request for training.

Another key factor is STIM's focusing of upgrading and retraining in a discrete division of the Institute (the B.I.G. Division). As a part of Evening and Special Program area, the Division has workable linkages to all other areas and departments of STIM, all of which to work toward the same end. B.I.G. Division staff members know what they must do and have established procedures to do it. The key steps have literally been spelled out in twenty-one points (listed in the previous section).

Still another factor in STIM's success is the establishment of the relatively new Institutional Outreach area under the general supervision of the director of administrative affairs. This area, in conjunction with B.I.G., attempts to identify and meet the training needs of a major part of the business and industry communities.

In short, the Institute has established both an economic development *structure* under which to operate and the *processes* necessary to guide a competent and dedicated staff. As a result, STIM is a strong public service institution in Memphis and west Tennessee.

Overall Success of STIM's Approach

In addition to institutional commitment and teamwork, STIM does not appear to suffer from departmental territoriality. Active communication between areas and departments is the prevailing pattern of behavior. As there are good working relationships among various units of STIM, there is also mutual respect and understanding between STIM and its clients. Additionally, there is a willingness of the Institute to design programs that will satisfy its clients' immediate training needs. If STIM does not have a program on the shelf that fits, it will tailor-make one.

The key factors and participants have been noted, but the "glue" that holds them all together is revealed by one of STIM's clients (John Furmanski of MLGW), who has stated, "I think it is the philosophy of the president that has made it possible." This philosophy is that all resources of the Institute can be pulled together as needed in order to serve the training needs of business, industry, and government. The approach of President Whitehead is one of problem solving; that is, any problems that are encountered can be resolved by facing them directly.

In bringing the Institute to its current high level of success, STIM staff and faculty have confronted problems in such diverse areas as scheduling differences between industry and the Institute, articulation of the various units of the Institute, and dealing with state bureaucracies. Because of the Institute's problem-solving approach, these problems have always been worked out, and will probably continue to be worked out in the future.

Within the Institute, the Institutional Outreach area will soon become more fully operational. When it does, STIM should be even more effective in identifying local and regional training needs.

Within Memphis and the west Tennessee region, the state's Industrial Training Service division is expected to use the resources of STIM to a greater extent. As that occurs, STIM will provide even greater assistance in attracting new industries to the area, developing more training services, and providing start-up training for industries that choose to settle in Memphis and west Tennessee.

Within the state, the Tennessee Department of Economic and Community Development is expected to seek a closer relationship between economic development and vocational-technical education. As it does so, STIM will be able to enlarge its role even more in upgrading and retraining adult workers in Memphis and west Tennessee.

OVERVIEW OF COLLEGE AND SETTING

Triton College, known formally as Illinois Community College District 504, is situated in the western suburbs of Chicago, and serves an official district of 400,000 residents. Triton was created in 1965 as part of the state system of community colleges, with a first year enrollment of 1,243 students. In 1981, its total enrollment was over twenty-nine thousand students, 92 percent of whom were concurrently employed.

Triton has the largest continuing education program in Illinois, and one of the largest programs in the United States. Its career education program has eighty-four different offerings. The College also recently created the Employee Development Institute (EDI), which offers customized courses and seminars on campus or at the work place, and the Job Training Institute (JTI), which offers condensed courses in saleable job skills for upgrading and retraining of adult workers in a special facility on campus.

Triton has taken a leadership role in meshing its offerings with the economic development needs of its service area and Illinois. There is currently only an embryonic state program involving community colleges in economic development, so Triton College has taken its own initiative in this area, making extensive linkages with the business and industry of the area, drawing trade associations (such as the National Society of Die Casting Engineers) to make their headquarters for training on the campus, and offering customized training on campus or at the work place.

OVERVIEW OF STRUCTURE FOR UPGRADING AND RETRAINING

State-level Structure

State Community College Structure

Illinois has a superb postsecondary education system composed of fourteen universities and the second largest community college system in the country. The major body governing the state's public postsecondary institutions is the Illinois Board of Higher Education. One of its segments is the Illinois Community College Board, which governs over fifty campuses and provides statewide planning, coordination, studies, and leadership for the system. Actual responsibility for the governance, administration, and operation of the community colleges is vested in the local district community college boards of trustees and their appointed staff.

Local boards of community college districts are elected by the residents of the districts (except in Chicago, where the board is appointed by the mayor, with the approval of city council). The local boards have jurisdiction over the scope of curricula, quality of teaching, and character of their colleges. The colleges are partially funded by a direct local tax levied by the local boards. The state Board retains decision-making power regarding approval of various requests from colleges, including instructional and public service programs, site selection, construction projects, and state financial support.

The Illinois Community College Board conducts a recognition program of member colleges that closely resembles the regional accrediting program of the Commission on Institutions of Higher Education. This state program calls for the visitation and evaluation of every member college every fifth year of college operation. New training programs must be approved by the state Community College Board (for example, the new Laser/Optics and Light Sensor technology Training program at Triton). The Board also requires every community college to conduct a follow-up survey of occupational graduates once every five years.

Illinois' Economic Development Structure

Illinois ranks about fifth in national unemployment (with an unemployment rate of about 11 percent as of summer 1982) and has a diverse economy and large investments in heavy industries. Chicago is one of the top corporate headquarters cities on the continent. The state's economic development agency is the Department of Commerce and Community Affairs (DCCA), whose mandate is "to help firms locate and expand, to provide finance and incentive packages and job training funds, promote product export, cut bureaucratic red tape, and seek legislative action to aid industry" (Kotulak 1982, p. 2).

To aid in economic development, the state has recently reformed unemployment insurance policy, established business tax relief, streamlined environmental regulations, and supplied money for industrial expansion and job training. A greater degree of improvement in these areas is needed, but recent actions have furthered the process. Illinois's governor and Chicago's mayor both recently established task forces to reach out to high-technology companies. The governor's High Technology Task Force has recommended that the state appropriate funds for recruiting faculty with expertise in high-technology areas, for establishing distinguished university professorships to attract leading academic figures, for purchasing state-of-the-art high-technology equipment for industrial and academic use, and for creating continuing education programs for high-technology corporate personnel.

Until very recently, training was not a major thrust of the state's economic development program, but this has been changing. The state Community College Board and DCCA have begun to work together for economic development. The recommendations of the governor's High Technology Task Force have resulted in two state-sponsored job training programs: the Industrial Training Program (ITP) and the High Impact Training (HITS) programs. The state appropriated $1.5 million for ITP and $450,000 for HITS in fiscal year 1982, with 49 percent of the funds coming from the federal government. The HITS programs, administered by DCCA and the state Division of Adult and Vocational Education (of the Illinois Office of Education), are funded by the state to enable community colleges and secondary schools to provide job training for employees of new and expanding businesses.

The HITS programs have begun to train a wide range of workers by using the following procedures:

> Colleges and business managers work together to design individualized training programs. The college hires and pays instructors, conducts independent evaluations of training, and provides employers with cost-benefit analyses upon conclusion of the projects. The participating businesses contribute instructional materials and help to tailor the courses to their needs. ("Carl Sandburg 'HITS' Recession" 1982, p. 2)

During the first eight months of fiscal year 1982, the HITS programs have assisted in training 1,060 employees for new jobs "at a cost of $725,000 that will return to the State $5,117,000 in

taxes paid" (State of Illinois Commission for Economic Development 1982, p. 19). Corporate requests for such training have continued to be made, but very limited funding has made it impossible to fulfill all the requests.

Just this year, the state governor met with the state's Council of Presidents of Community Colleges and assured the presidents that their institutions are now a vital part of the state economic development effort. One problem, however, is that the community colleges and the state economic development agencies have diverse lines of governance, and the state's economic development programs and task forces are not housed within a single entity. Coordination among them does not appear to have developed to a point, as yet, where cohesive efforts might be applied to the common goal.

Institutional Structure

Triton College Organization

As part of Illinois' community college system, Triton College is administered by the Illinois Board of Higher Education's Community College Board. Operating in conjunction with the Community College Board in the governance of Triton College are the state's Capital Development Board and the Illinois Office of Education (Division for Vocational and Technical Education) (see figure 19). Each community college in the state system is also governed by an elected (or, in Chicago, an appointed) local board of trustees.

Members of the Triton Board of Trustees are elected by the citizens of the twenty-four municipalities in the western suburbs of Chicago, which comprise the College's service area. The Triton Board of Trustees has budgetary power over appropriations of local tax revenues for the College and is able to designate funds for various College programs and projects.

The relationship between Triton College and its board of trustees has been described as having "a phenomenal amount of communication. . . a number of the [College] administrators daily will talk to our board on the phone."* The Triton board is also credited with having a superb working relationship with state agencies and legislators of both parties in Springfield, the state capital. Whereas the board members are elected and the positions are political, the board has a record of being responsive to the needs and goals of the College. Moreover, the board has supported most of the current president's innovative goals and programs for Triton.

The College organization is a large one (see figure 20). Flexibility is the watchword, and the organizational structure has been in a frequent state of flux over the past few years as top staff members have moved around within the administration. This has created a strongly integrated working team in the College, through which administrators have become knowledgeable and supportive of each other's activities in an atmosphere that is informal but conducive to hard work and dedication to service.

The College puts considerable effort into building and maintaining its outreach, its influence, and its reputation in the community, as is evidenced by its having a vice-president of public affairs and marketing, and the state college system's only associate vice-president of economic development. A vice-president of business management oversees the business concerns of operating a comprehensive community college as well as its personnel activities, and the actual

*Personal interview with David Kozlowski, Associate Vice-President of Economic Development, Triton College, 8 July 1982.

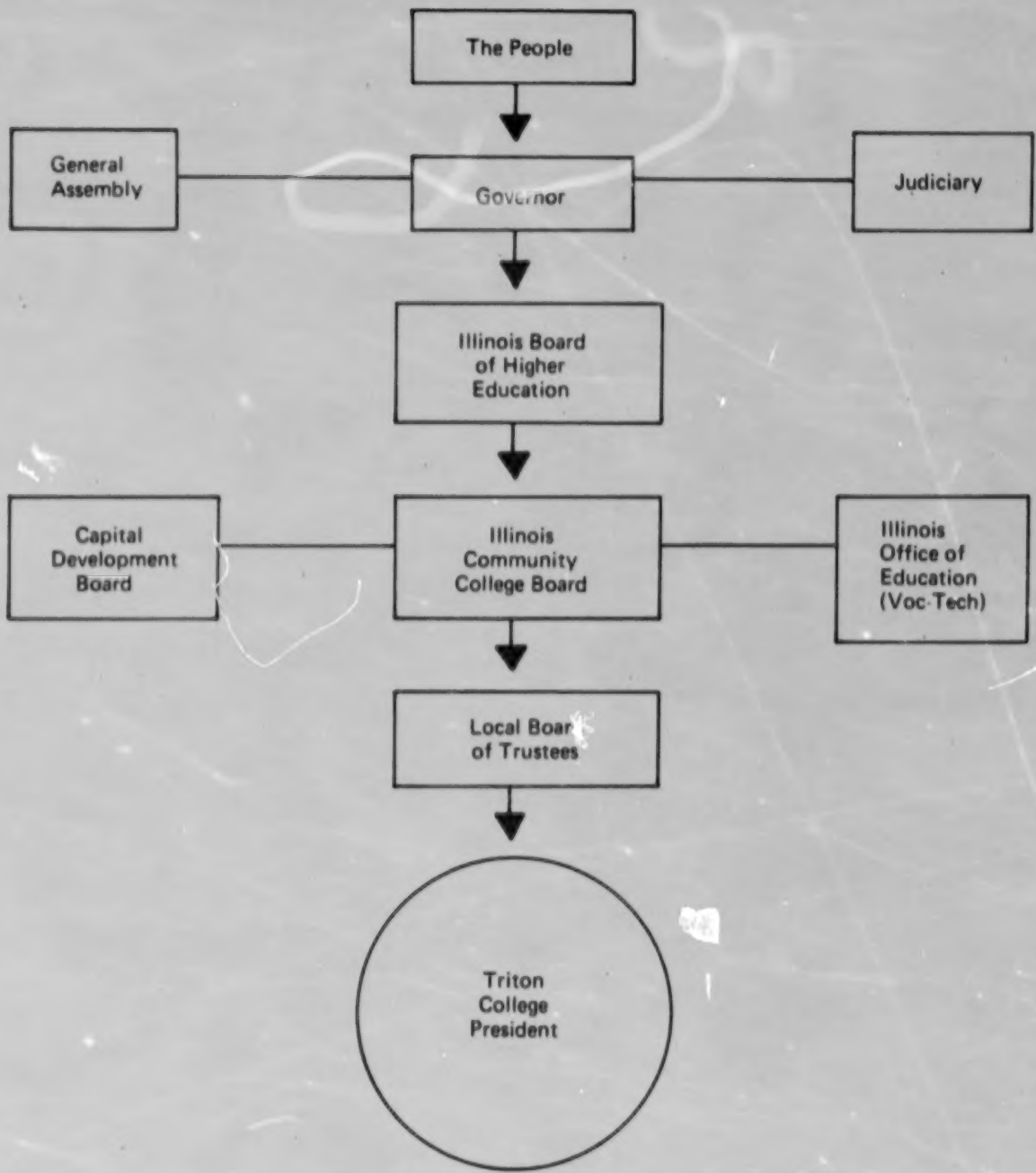

Figure 19. State Structure for Administration of Triton College

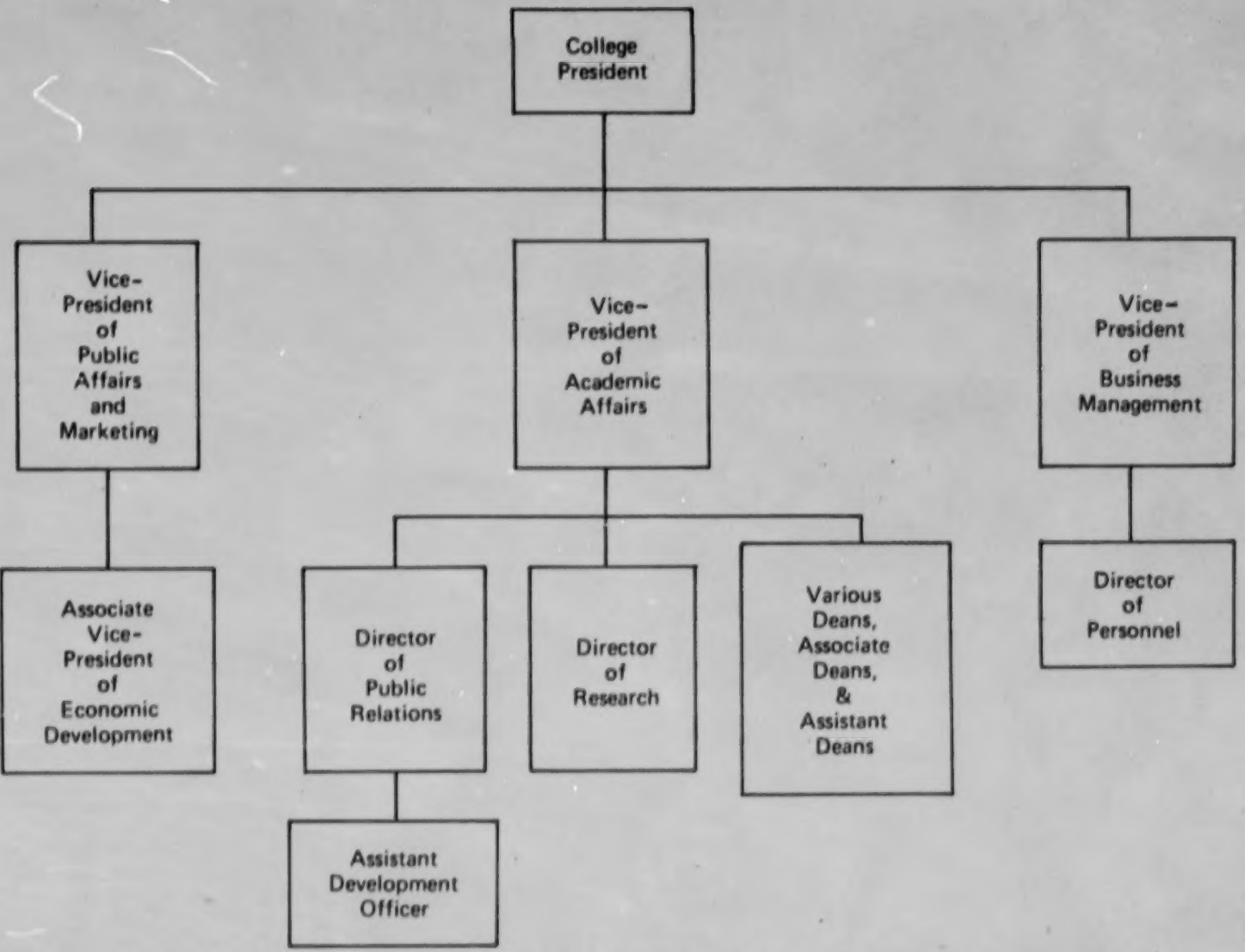
College President
Vice-President of Public Affairs and Marketing
Vice-President of Academic Affairs
Vice-President of Business Management
Associate Vice-President of Economic Development
Director of Public Relations
Director of Research
Various Deans, Associate Deans, & Assistant Deans
Director of Personnel
Assistant Development Officer

Figure 20. Top Levels, Triton College Administration

training activities of the College are under the jurisdiction of the vice-president of academic affairs.

Because Triton is a comprehensive community college, it offers a wide range of training opportunities, overseen by the vice-president of academic affairs and the various deans, associate deans, directors, and coordinators (see figure 21). Within the School of Career Education are eighty-four different career education program areas offering degrees, one-year certificates, and basic certificates for students who want to acquire skills in specific career fields. These are training areas generally not found at four-year colleges, and credit for courses in these areas is not usually transferable to such institutions. Associate's degrees are awarded for two-year programs, certificates are awarded for one-year programs, and basic certificates are awarded for condensed, short-term programs.

Triton offers more career programs than any other Illinois college. In 1980 it expanded facilities, thereby creating an "east campus" and a "west campus" for different career education programs. The School of Career Education also recently established the Job Training Institute, which offers saleable job skills training in a condensed period of time (usually less than eight weeks) in order to meet immediate job training needs for local industry.

The School of Arts and Sciences courses are parallel to those offered at state universities and are transferable to four-year institutions. Associate's degrees are offered upon completion. Entry to Triton's School of Arts and Sciences courses is restricted to students who are also eligible to enter four-year state colleges.

The School of Continuing Education has five major areas of focus: (1) Career Development, (2) Adult Basic Education, (3) Transitions in Life, (4) Recreation and Self-Improvement, and (5) Cultural Programming and Community Forums. The last three areas primarily involve cultural, leisure, social, and intellectual programs that are not directly related to worklife. The Adult Basic Education area offers basic skills training, GED test preparation, and classes in English as a second language for adults. Most are available tuition-free to students. The Career Development area of the School of Continuing Education includes the following:

- The Employee Development Institute (EDI)—meets the challenge of an evolving technology and changing work force by designing and sponsoring seminars and short courses to train, retrain, and upgrade the work skills of individuals. These courses do not always grant credit toward degrees.

- Continuing Education Center for Nursing and Allied Health Professionals—designs programs to update clinical knowledge and theory of practitioners, supervisors, or health-care educators. These courses are not for credit.

- The Occupational Program Extension Centers—offer courses for men and women who want to enter the job market, find a new career, or upgrade their position within their present occupational field. These noncredit classes are geared to employment so students can compete in the job market.

The Learning Resources Center has a seventy-thousand volume library that is on line with the University of Illinois, a film library, and study carrels with the latest audiovisual equipment.

Triton's full-time teaching staff numbers 225 instructors, with over 1,000 part-time and evening adjunct faculty. Triton continually looks to local business and industry as well as to top universities for teaching staff qualified in high technology and other vital program areas.

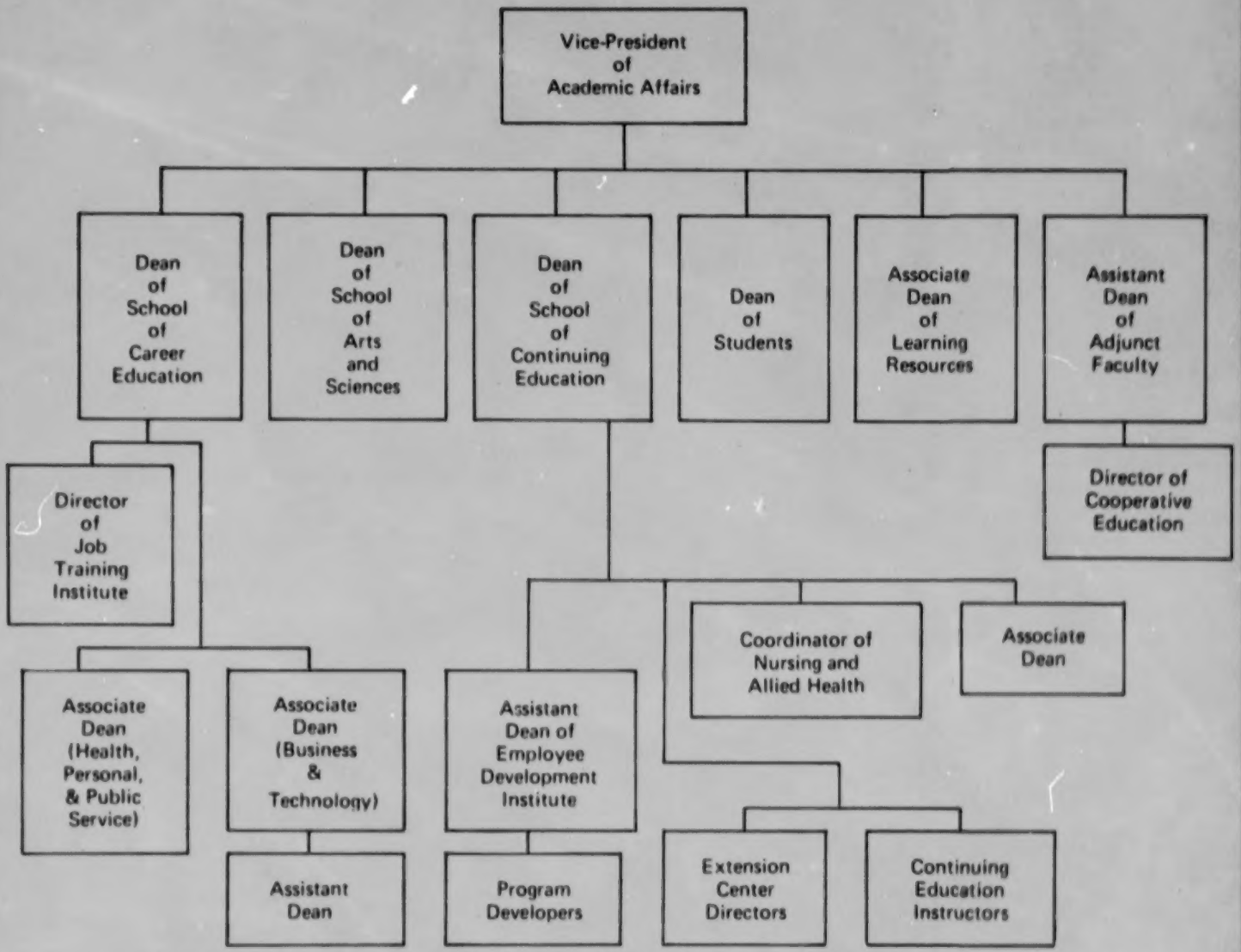
Vice-President of Academic Affairs
Dean of School of Career Education
Dean of School of Arts and Sciences
Dean of School of Continuing Education
Dean of Students
Associate Dean of Learning Resources
Assistant Dean of Adjunct Faculty
Director of Cooperative Education
Director of Job Training Institute
Associate Dean (Health, Personal, & Public Service)
Associate Dean (Business & Technology)
Assistant Dean
Assistant Dean of Employee Development Institute
Program Developers
Coordinator of Nursing and Allied Health
Associate Dean
Extension Center Directors
Continuing Education Instructors

Figure 21. Administrative Levels under the Vice-President of Academic Affairs, Triton College

Mission of Triton College

In Triton College's 1981-1982 catalog (Illinois Community College District 504 1981), the College describes its mission in the following way:

- To provide superior educational opportunities for community residents who can profit from college-level instruction
- To promote the fullest educational development of each student
- To promulgate the finest ideals of American democracy so that students become informed, mature participants in society
- To maintain, within an awareness of others, individual rights and freedoms
- To stimulate the intellectual and cultural life of students and of the community
- To provide educational competencies based on the changing demands of a dynamic society (p. 11)

For the school year 1981-1982, the president published his goals for the College (which have remained, in essence, the same for school year 1982-1983). Some of these goals are as follows:

- Strengthening and promoting the ability of the College to assist in economic development of the district
- Developing working relationships with business, industry, and professional associations for the purpose of establishing institutes on the Triton College campus and promoting the transfer of state-of-the-art technology
- Modifying existing career programs and introducing new career programs that reflect social trends and technological developments
- Developing and supporting learning opportunities that meet the needs of district residents for courses that are presented in a variety of ways, times, and places and that utilize the potential of media, especially cable TV
- Expanding market analysis capabilities by moving emphasis from internal demographic analysis to a balanced approach involving attitudinal research in combination with demographics for the purpose of supporting new student markets
- Promoting and supporting environmental scanning activities that lead to the development of new programs and new associations and that result in improved service to the educational needs of our community (Triton College 1981, pp. 1-2)

The president's goals for the College change from year to year to some degree to reflect the current needs of the College and the community. The College's thrust for involvement in economic development is characterized as "an evolving role that has not crystalized. . . . When people think of economic development in the greater Chicago area, we want Triton's name to be synonymous with [redacted]"*

*Personal interview with David Kozlowski, Associate Vice-President of Economic Development, Triton College, 8 July 1982.

Other, informal goals of the College include: (1) diversifying its training offerings to reach different markets and particularly to reach adult students, and (2) expanding the reputation of the College from its current "career center of the Midwest" to include "the industrial center for high-technology training in the Midwest."

Institutional Funding

As part of the state community college system, Triton is among the only higher education institutions in Illinois that are partially funded by a direct local tax levied by a local, selected governance board. Triton receives about one-third of its funding from the state and another third from local property taxes (see figure 22). Student tuition accounts for a little less than the remaining one-third of the annual budget, which in 1982 was approximately $25 million. Another major source of income for the College is from private and other grants, which in 1979 amounted to about $1 million.

Budget flexibility is very important at Triton. The College seeks funding for many specific programs from a variety of funding sources. Funds are directed to areas of greatest need, and the College vigorously pursues alternative and unique sources of income. For instance, Triton tries to make its buildings pay for themselves, as with the Cernan Earth and Space Theatre, where laser shows are performed for the public. The Theatre is expected to collect sufficient monies in admission from the shows to cover its annual operating budgets. The College "is attempting to become as self-supporting as a public institution can be" (Triton College 1980, p. 13).

Distinctive Features of the College

A commitment to doing everything possible related to training and education to aid the economic development of the community and local industries is Triton's theme. This theme finds greatest expression in two features of the College: (1) its management style and (2) its leadership and strategic planning.

Management style at Triton. The management style at Triton is one of its most distinct features, and has been characterized as "informal, versatile, and verbal." The College president's approach is to allow each key person to perform his or her duties in whatever manner seems most effective—as long as the goals are met. Risk taking is considered appropriate, but staff must be ready and able to step in and make adjustments or provide back-up if a risk taken seems about to fail. Top-level staff are expected to uphold the reputation of the College for always coming through on a commitment, so that there is no failure to deliver promised services even if the College itself must provide resources beyond those originally planned. This policy of risk taking and back-up regardless of consequences has proven successful in every area of the College's programs and outreach.

The management style is reflected in other practices. The particular appointments to positions within the top levels of administration are frequently in flux, as people are moved around as needed—fitting the "right person to the job." This allows considerable versatility among staff members, who are thus able to communicate and cooperate among themselves on various projects, as needed, or even substitute for each other when appropriate. The degree of bureaucratic procedure is kept to a minimum.

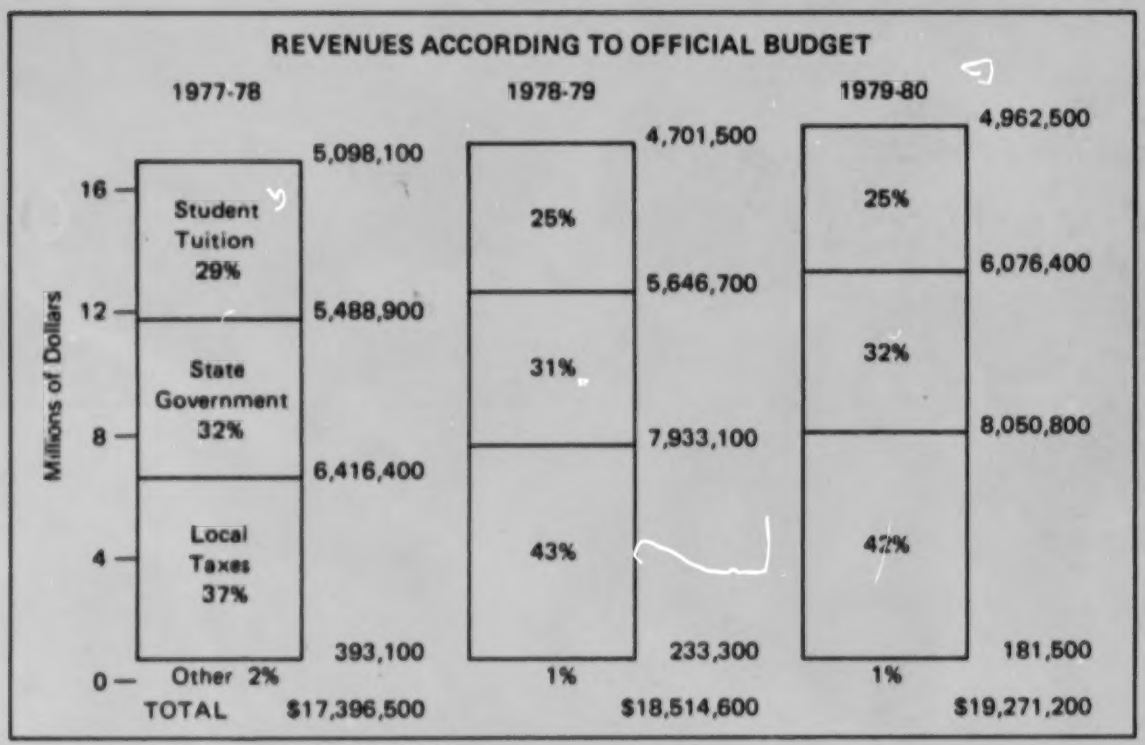

Figure 22. Funding Sources for Triton College

SOURCE: Triton Community College 1980, p. 25.

Any and all employees of the College are encouraged to look for and take advantage of opportunities to reach out into the community and into industry to extend College services and aid in economic development. Protocol is kept to a minimum within the administrative echelons to facilitate this. Top staff members are encouraged at regularly weekly meetings to express themselves, and creativity is a major thrust. Staff members at all levels have an intense pride in Triton's successes and in its reputation. A prime motivator to facilitating the College's goals is the "taste of further successes."

Leadership and strategic planning at Triton. The current president, Brent Knight, sets the tone for the work style and commitment of the College. A key effort under Knight's administration is to expand Triton's involvement in local economic development. To this end, the College is uniquely flexible, seeking to deliver training, information, and consultation wherever and whenever it is needed.

Whereas certain instrinsic goals of the College remain stable, the president's goals are dynamic and change from year to year to meet the most pressing community needs. In this he has the cooperation and support of the College's elected board of trustees. These goals are defined by consensus of staff and the board, yet are, in essence, driven by the vision of the president.

College staff members, especially in the top levels of administration, make fluent use of business terms and analogies. This is an asset in the College's economic development outreach efforts, because it assures industry that the College understands its needs and priorities. The attitude of the top administrators is that most interests of industry are parallel to the mission and goals of the College, particularly in the area of economic development.

There is an expressed and committed interest in long-range strategic planning at the College. Short-term needs are not ignored, but the president has focused efforts on offsetting possible retrenchment (because of the ailing economy) by stimulating growth in high-technology programs and other areas. The College is concerned not only with the short-term economic development of the western Chicago suburbs, but also with planning to aid in the economic health of the area throughout the rest of the century and beyond. To aid in these efforts, College representatives are currently trying to establish close relationships with state economic development staff and agencies. College administrative staff members are also working to achieve greater internal affinity and cooperation with the unionized faculty association in order to facilitate support for the College's long-range goals.

Structure for Economic Development

As mentioned earlier, the impetus for economic development in the state of Illinois has only recently begun to bring community college training into its arena through the HITS programs and other activities. Funding for the programs has thus far been sparse, and Triton has completed only one small HITS program. Triton is currently cooperating with Oakton Community College on two other HITS training programs.

Nevertheless, Triton College has its own internal structure for economic development, with its own associate vice-president for economic development. This vice-president has been very active in reaching out to local and prospective businesses and industries and, most notably, to trade associations. However, every member of Triton's administrative staff functions as an ambassador for the College's economic development outreach, and economic development efforts are shared by the spectrum of College divisions, departments, and institutes.

The Job Training Institute (JTI) is a unique feature of Triton's economic development structure. Like the Employee Development Institute, JTI was created to meet the short-term job training needs of local industry and municipalities. JTI offers "saleable job skills in a condensed period of time, usually less than eight weeks. Trainees attend classes forty hours a week during which time they can learn lift-truck mechanics, computer operation, burglar alarm installation, and other occupations in which there exists an immediate need for employees" (Triton College 1980, p. 9). This new concept in training provides accelerated training in entry-level skills for a large number of currently available jobs requiring training in the range of 100 to 300 hours. Training hours are highly flexible, and JTI has a special facility for its seminars and workshops.

The Employee Development Institute (EDI) was established specifically to upgrade the skills of persons who are currently employed. EDI offered over 125 seminars in 1980 both on campus and at work sites. The majority of the seminars and short courses offered through EDI are tailored to the needs of particular companies that require upgrading or retraining for their employees.

Triton, through JTI, EDI, and other College divisions, has offered a wide variety of customized training and seminars for industry, government, and trade associations. In the past two years, customized courses and seminars have been conducted for such organizations as the National Association of Machinists, General Motors, International Harvester, Quasar Electronics, and the Association of General Contractors. Some seminars have been offered in cooperation with other educational institutions, such as the University of Toledo. Some customized training has been for apprenticeships, and some apprenticeship training—while not specifically customized—is conducted by Triton with the approval and accreditation of unions, trade or professional associations, or companies involved in planning and assessing the apprenticeship training programs.

Perhaps one of the most unique kinds of economic development efforts at Triton is the special relationship that has evolved with a variety of trade associations. Several trade associations, such as the American Mold Builders, have moved their training activities onto the Triton campus. Other associations are also planning to move their headquarters and training onto the campus, including the American Patrol Association and the Numerical Control Society.

Economic Development Funding

To keep customized course costs low, costs are based on tuition and what it costs to run the program. That is, College planners estimate the break-even points for program costs and calculate the number of students necessary to make the program both cost-effective and training-effective. Companies are charged only what the programs cost.

Triton has been working to offset the retrenchment that is so common across postsecondary education in the entire country by focusing its efforts on growth areas. It is developing or redeveloping curricula and programs in those employment areas found to be most economically "healthy" by the College's own environmental scanning. It does not neglect less popular areas where training needs continue to exist, but it does focus marketing on the more economically attractive program areas in order to ensure the College of sufficient income to avoid retrenchment.

College Structure for Upgrading and Retraining

The School of Arts and Sciences

Courses taught through the School of Arts and Sciences are intended for those students who plan to move on to institutions of higher learning and complete baccalaureate degrees. Triton arts and sciences students are awarded an associate's degree upon completing their program.

For the most part, courses and programs offered by arts and sciences are not considered opportunities for the upgrading and retraining of adult workers.

The School of Career Education

The School of Career Education offers associate's degrees, one-year certificates, and basic certificates in a variety of careers that are not normally found at four-year institutions. The School has three program arms: (1) Health, Personal, and Public Service; (2) Business and Technology; and (3) the Job Training Institute. Program coordinators for each of the first two areas are responsible for keeping curricula up to date and for introducing new programs as demand for workers in those areas arises.

The School of Career Education also conducts general or customized seminars and workshops for very short-term upgrading needs of adult workers.

The Job Training Institute (JTI) offers accelerated, concentrated courses (mostly noncredit) for persons wishing to retrain to enter entry-level positions in fields experiencing high demand. Because such demands are often intermittent, JTI does not offer a steady "menu" of courses; it adds or drops courses as demand increases or slackens. JTI has access to all the resources of the career education departments.

The director of JTI reports that JTI students typically are people who are looking for jobs or who have just become employed; that is, persons seeking training or retraining, not upgrading.* JTI students are pretested on their basic skills, and, whereas no one is turned away from the courses, persons with inadequate basic skills are counseled regarding their potential problems with the course and are steered, if possible, into remedial courses prior to taking JTI training. JTI also makes a placement service available to its students, of whom 70 percent (on the average) are hired immediately following completion of the JTI courses.

The majority of the instructors of JTI courses are part-time (adjunct) faculty hired because of their relevant expertise to teach specific courses. These faculty members are hired directly by the director of JTI.

The School of Continuing Education

More than thirty thousand students enroll in Triton's continuing education programs, seminars, and other training each year. The school consists of five major areas, but the only area directly concerned with upgrading/retraining of adult workers is the school's Career Development area. This area includes (1) the Continuing Education Center for Nursing and

*Personal interview with Cherie LeFevre McCrosky, Director, Job Training Institute, Triton College, 8 July 1982.

Allied Health Professionals, (2) the Occupational Program Extension Centers, and (3) the Employee Development Institute (EDI).

Through the School of Continuing Education, a wealth of upgrading opportunities are made available to adult workers. The school makes many accommodations for the convenience of its working students. The school also maintains program developers—who are also program evaluators—to keep the programs and their content timely and effective.

Continuing education offerings may be customized or not. Some customized programs are delivered through the Employee Development Institute. Most EDI offerings are conducted on-campus at the College Center building.

College-wide Upgrading and Retraining Support

Triton aids in the upgrading and retraining efforts of all its departments through its curricular upgrading procedures and its environmental scanning and strategic planning activities. The curricular upgrading procedures depend heavily upon the environmental scanning. The degree of employability of graduates from different curricular areas is assessed yearly, during an annual follow-up of occupational graduates.

Through the School of Continuing Education's Adult Basic Education area, adults deficient in basic skills or in English as a second language are given the opportunity to improve their skills. In addition, the College offers Cooperative Education—integrating classroom theory with practical experience in business, industry, or public service—in almost every career curriculum. Retraining opportunities are available to qualified persons through a variety of CETA training programs conducted through the College.

The College recently established a Laser/Optics and Light Sensor Technology Training program—one of the few in the United States. It also has a continuing education nursing program that is accredited by the American Nurses' Association—the first community college in Illinois and the second in the country to receive that accreditation.

The College also offers free workshops and "clinics" to aid unemployed workers in the community, with such activities as its Unemployment Clinic, where attendees can participate in a variety of one-hour workshops on such topics as effective resume writing, interviewing skills, financial planning during job transition, and so forth. The free Unemployment Clinic also offers computerized placement assistance, job opportunities listings, and free resume typing.

A unique activity in the College is exemplified by JTI's Cobbler Training program, which is designed to perpetuate the dying skills of shoe repair. With our changing economy, budget-stretching services such as shoe repair represent small but reliable employment and entrepreneurship opportunities.

CUSTOMIZED TRAINING PROGRAMS AT TRITON

More than twenty-five thousand workers have upgraded their job skills and knowledge through Triton's customized training. Triton (1) operates the customized courses, or (2) it jointly sponsors them with the company, or (3) it sets up cooperative arrangements by which the

company's or trade association's own training facilities are housed on campus. As Daniel Moriarty, vice-president for academic affairs, points out:

> There are no value judgments involved, just. . . whatever meets the needs of that particular industry. We want to be flexible for all types of [training] relationships. We are not advocating one type of relationship. . . we are advocating flexibility.*

Customized training is offered through virtually every arm of the Schools of Career Education and of Continuing Education. For example, many Employee Development Institute (EDI) courses are customized and offered at the work sites, and may or may not be for credit. The Job Training Institute (JTI) likewise customizes courses or seminars, frequently offering them at its facilities on campus. The overlaps are not considered a problem at Triton, where the philosophy is simply that whoever can do the job best should do it.

As a result, the College has reached out to deliver customized training for a wide variety of companies, trade associations, and agencies. Several programs have involved bringing trade associations directly on campus to establish permanent training headquarters there, with a long-term College-trade association relationship.

The following sections relate two customized training "success stories"—examples of the exemplary customized training programs delivered by Triton College to upgrade and retrain adult workers.

General Motors Corporation

General Motors (GM) and Triton began working together on customized training for GM in early 1981. GM requested assistance in three areas of customized training to enable persons working on or with GM products to keep abreast of the latest technological changes in its automobiles. As Ken McCourt, GM's manager of training development, explains:

> Triton was selected because we couldn't handle all our own training needs. Our thirty-one training centers throughout the country were packed when we began searching the country for additional training centers. . . . Triton has state-of-the-art equipment and good automotive instructors. ("Businesses Spending More" 1982, p. 3)

Triton's three training programs for GM are designed to meet the specific needs of (1) mechanics working at GM dealerships who need skills upgrading, (2) apprentices in GM mechanics, and (3) insurance adjustors who deal with claims on GM products.

The upgrading training of experienced mechanics is for mechanics employed at GM dealerships. These involve short-term workshops on the latest technologies going into GM cars, such as computer command control. Most of the workshops are for a week or less of instruction. This portion of the Triton-GM training has been delivered by Triton instructors at the site of the Hinsdale GM Training Center.

Apprenticeship training for GM mechanics is a two-year associate's degree program, and Triton is one of six colleges in the country providing such customized apprenticeship training for GM. The program—using GM autos and GM equipment—is an on-campus automotive mechanic program for which students are screened by the sponsoring GM dealerships. Training takes

*Personal interview with Daniel Moriarty, Vice-President for Academic Affairs, Triton College, 8 July 1982.

eighty-seven weeks, combining class work with practical experience, in which students spend thirty-nine of the training weeks (intermittently, between blocks of classroom sessions) with their sponsoring GM dealers. GM itself donated about $130,000 in GM equipment for the program.

The GM Insurance Adjustor program is a short (three-week) but intensive basic auto mechanics course, paid for by GM and given on the Triton campus. The School of Career Education works closely with EDI to deliver the training, which deals solely with GM cars. This program enables insurance adjustors to be able to recognize true problems with GM products, especially regarding claims for defects.

The National Society of Die Casting Engineers

After searching for some time for an appropriate location for its headquarters and training facilities, the National Society of Die Casting Engineers (SDCE) chose the Triton College campus as its site. The SDCE constructed a national training center on the campus to house its headquarters and to provide upgrading for die-casting employees as well as basic training for new entrants into the occupation. The SDCE has equipped the training center/lab with $300,000 in equipment, and Triton provides expert instructors and a complete catalog of courses. This arrangement represents the first time a community college has housed and staffed a training center for a professional trade organization.

According to James F. Cannon, executive vice-president for SDCE, "Through our cooperative effort . . . we will teach the whole process from the time a person comes into the die-casting field to what he [sic] needs to know in order to maximize his contribution to the company and, of course, to himself" (Carmichael 1981). Students in Triton's two-year associate's degree program with SDCE will enter industry as die-casting operators, and will be able to move upward to a supervisory capacity once they have gained additional experience.

This unique kind of arrangement (the first of several, with more in current negotiation) is expected to accrue a number of benefits both for Triton and for the Society. The benefits to the SDCE are expected to be as follows:

- The die-casting industry will have a central location for training present employees or new entrants in the field, a location that will be enhanced by its association with a leading community college.
- The opportunity for national training will be enhanced by Triton's outstanding location, not only in terms of metropolitan Chicago but in terms of its ready access to O'Hare air field.
- The numerous advantages of a comprehensive educational facility will be available—excellent conference and dining facilities, media services, printing, etc. (Koziowski and Magnesen 1981)

The benefits to Triton College are expected to be as follows:

- Triton's growing reputation as an institution that understands industry needs and is willing to work with industry on the resolution of those needs will receive a significant boost.

- Local students will have an opportunity to pursue a career in die casting, an opportunity that Triton could not have provided by itself because it lacked existing space and capital budget requirements to equip a die-casting laboratory. Because of the unique program, the Illinois Community College Board has designated the new program a "state" program, meaning that there will be no other programs in the state of Illinois.

- Triton College will have access to the latest changes in die-casting technology with the location of technological leaders in the field on the campus.

- Other programs at Triton—Machine Technology, Design/Drafting, Apprenticeship Training, Engineering—will have ready access to technologically related developments and a source for on-campus field trips and speakers.

- Opportunities will be available for increased revenue through seminars and workshops, as well as through generation of regular credits.

- The cost of constructing the facility will be offset by lease payments made by the SDCE to Triton College.

- The economy of Illinois should also benefit, as die-casting operations can expand because of the availability of locally trained personnel. (Ibid.)

In addition, the introduction of such relationships with SDCE and other trade associations is expected to help provide up-to-date information and equipment in new and advancing technologies, to generate student enrollment opportunities, to combat declining trends in high school graduations, and to assist Triton in maintaining its "currency" in high-technology training.

OVERVIEW OF PROCESS FOR DELIVERY OF UPGRADING AND RETRAINING

This section examines, in detail, how Triton participates in economic development in its service area through the delivery of customized and noncustomized upgrading and retraining. The section reviews (1) critical linkages, exchange of information, and marketing for upgrading and retraining; (2) needs assessment procedures; (3) customized training agreements; (4) the critical processes in program design and delivery; (5) the "nows" of course approvals for customized training; (6) information about costs, funding, and tuition for customized training; (7) information about selection and upgrading of instructors; (8) information on scheduling and allocation of facilities and equipment; and (9) methods of evaluating both training programs and the entire College approach to upgrading and retraining adult workers.

Linkages, Information Exchange, and Marketing

Four major actors are involved in the process of creating, designing, and delivering upgrading and retraining programs at Triton: (1) the state community college structure and the state economic development structure, (2) business and industry, (3) trade associations or societies, and (4) the Triton College Board of Trustees and the College itself. For effective programs to be developed and delivered, the actors must be reasonably synchronized in the related values, plans, and actions. Feedback at all stages is vital, and cooperation and flexibility are key elements for success.

As mentioned earlier, the state legislature has created an economic development function for the Department of Commerce and Community Affairs (DCCA). Triton has recently begun to participate in the state's new High Impact Training (HITS) program, which is administered by both DCCA and the state Division of Adult and Vocational Education. Triton has made effective use of the communications skills of its own administrative staff and its board of trustees in fostering a superb working relationship with state agencies and legislators, as well as with the state Community College Board. The president and other administrative staff at Triton have met with various state agencies, with the state's Council of Presidents of Community Colleges, and with the state governor and his High Technology Task Force in order to stimulate and facilitate the state's involvement of community colleges in economic development efforts. The initiative of Triton College administrators has frequently captured the attention and, in part, has stimulated the organization of such meetings.

Triton's links with industry are many and complex, involving interactions as casual as telephone calls for information for Triton's "environmental scanning" process and as formal as General Motors' uniquely customized training relationship with the College. Triton includes many industry representatives on the advisory committees for its training areas not only to help keep the programs up to date, but also to keep the local companies in tune with the College's goals, needs, and services. Some training relationships involve cosponsoring seminars or courses with outside companies or organizations.

Triton's linkages with trade associations or societies are truly exemplary. The location of the Society of Die Casting Engineers' headquarters on the Triton campus was the first time such a relationship was formed with a community college. Representatives of the various societies locating on the Triton campus who are experts in their fields serve on advisory committees for related training programs. The College supplies instructors for the societies' own upgrading courses and seminars. These mutually beneficial linkages are aggressively pursued by Triton administrators, who envision an "Avenue of Societies" located on the campus at some time in the future.

Methods of Promoting College/Industry Information Exchange

Triton uses every available resource it has both to gather pertinent information from industry for upgrading programs, equipment, and instruction, and to disseminate information about its own services. Many important contacts have been made through the College's marketing thrust, bringing in customized training requests and vital information about changing skills, occupations, and levels of job demand. Triton's membership in numerous professional networks has been another useful source of information and resource for the dissemination of Triton services.

Other pivotal resources for staying in close contact with industry (as well as with societies and trade associations) are Triton's program advisory committee members and its adjunct faculty members and seminar consultants. Many advisory committee members and part-time faculty are concurrently employed with (or own) local businesses and industries, or are active members of trade associations. With their dual participation in the affairs of the College and of their organizations, these key persons are sensitive to the needs and purposes of both kinds of organizations and function as "two-way streets" for the promotion of each other's cooperative potential.

Triton's Marketing Approach

Aggressive marketing is a key process in Triton's delivery of customized and noncustomized training for upgrading and retraining adult workers. The College has used virtually every kind of marketing method, including brochures; advertising in newspapers, magazines, and on radio; radio interviews; newspaper articles based on interviews with Triton staff; telemarketing; and so forth.

Triton primarily has two audiences it tries to reach: potential students (most of whom are working adults) and companies. The process of reaching students makes use of clever ad approaches and mass marketing through newspapers and the like. (The College did attempt to market some courses through television advertising, but it was not cost-effective.) With considerable success, JTI has taken ads in the local newspapers with two-page spreads in the Sunday magazine supplements to advertise its continuing education and credit courses. The executive director of the Continuing Education Center for Nursing and Allied Health Professionals recently determined a marketing strategy for the center by using a market-testing strategy:

> I advertised every month last year, other than July, in the *Tribune*. In the "Tempo" section they have a nursing area, and the ad ran us something like $700-900 with a list of programs. . . . We put in a false name that doesn't exist on campus . . . and then I had the secretaries keep track of it, and then I found that my greatest month was August, when people are thinking about going back to school. And so August and September were probably our best two months for advertising.*

The College uses brochures, posters, and an inventive advertising approach in its catalogs to present its upcoming courses. For example, early morning continuing education courses were recently advertised in a College catalog under the title "Breakfast of Champions." This humorous approach caught the attention of potential students, and early morning courses, which usually had poor registration, were filled up. Triton staff members take great care to present all course advertisements creatively, professionally, and attractively and to ensure that the ads have considerable credibility and appeal.

In reaching out to industry, Triton has used slick, highly professional advertising in magazines such as *High Technology* and in its "herringbone" brochures—smartly designed brochures (with a herringbone-wool pattern, like a business suit) that are part of the "Triton for Training" marketing strategy. This strategy is how Triton markets its customized training. The main "herringbone" brochure gives an inviting overview of Triton's customized training successes, its services, its facilities, course offerings, and other physical support for customized training; its philosophy regarding customized training ("Triton's management team understands your training problems"); and the advantages of Triton's excellent location in the near west suburbs of Chicago.

The "Triton for Training" promotional campaign goes beyond ads in magazines and newspapers to the use of a concerted, well-designed direct mail marketing strategy. The direct mail strategy uses the "herringbone" brochures (a general information booklet and a folded, more succinct brochure), and two letters. The first letter, sent to a company president or director of training, opens with the question, "Are you running a business or are you running a school?" The letter then introduces Triton's offer to conduct a training needs assessment for the company,

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*Personal interview with Beverly Curry, Executive Director, Continuing Education Center for Nursing and Allied Health Professionals, Triton College, 8 July 1982.

at no cost or obligation to the firm, and extends an invitation to call the College or to return an enclosed postpaid card. If a company does not respond within a reasonable amount of time, a follow-up letter is sent. The follow-up letter opens with:

> Dear Executive:
>
> I'd like to take this opportunity to compliment you. Your employee training programs must be operating at peak efficiency level . . . accomplishing all the things that you want them to. . . . *If these things weren't true, you'd be asking me to tell you more about Triton for Training.*

The direct mail marketing campaign, which is an ongoing operation, is conducted through the office of the associate vice-president for economic development at Triton. Should the Triton staff receive even the slightest "nibble" from a company, a staff member immediately follows it up with a telephone call. The Economic Development Office employs four telephone marketers who have been trained in telemarketing by professional trainers. The objective of the phone calls is to make an appointment with the company chief executive or the director of training. Once the appointment is made, College staff members (often the associate vice-president for economic development or one of the associate deans or directors from one of the schools or centers) visit the company to sell Triton's customized training. This marketing approach has been very successful.

Besides the direct mail marketing operation, the various schools and centers have their own approaches to personal marketing of their customized services. For example, JTI employs a number of staff as placement officers to develop potential job placements for graduates of JTI training. As these persons make contacts with companies in the area, they are also expected to make use of those contacts to help bring in new training opportunities. The director of JTI spends a portion of her time "knocking on doors" of local companies to generate opportunities for customized training programs through JTI. In the School of Career Education, various program areas have program coordinators—faculty members who, in addition to teaching and other duties, both sell and develop customized programs. Program coordinators receive a stipend for any program sales and development they initiate.

Program Design and Delivery

Needs Assessment for Upgrading and Retraining

Needs assessment for industry. As part of its marketing approach for customized training, Triton offers free technical assistance—usually in the form of training needs analysis—to existing or incoming companies. For companies that then request customized training, the needs analyses serve as the basis for outlining specialized programs to improve the skills and productivity of the employees.

As part of Triton College's strategic planning, College staff members (especially the administrative staff) are continually involved in activities termed "environmental scanning." These involve needs assessments of job markets (short- and long-range), technological change, and emerging skills. Such activities also serve as evaluations of the College's placement successes, marketing approach, and so forth. (Triton does not have a formal needs assessment process, although its director of research and research staff do conduct some formal surveys.) College

staff members "scan" the environment in their own ways, but are expected to keep their particular areas up to date in terms of meeting changing technological needs, job demand, certification, and so forth. As Triton's president points out, "I think we have such extensive contacts with business that we aren't missing out on anything very often . . . ."*

Environmental scanning involves keeping close contacts with industry and government and with reading widely in related areas. College administrators encourage any College staff person to watch for opportunities for the College to reach out into the community with training, and to seize that opportunity or pass on the information.

The College's research staff members conduct formal surveys to assess community needs and to determine the congruity (or lack of congruity) between College training and community needs. Triton's Office of Research annually conducts a follow-up survey of occupational graduates to monitor changing employment opportunities. The College also has had a Gallup poll taken of its service community to assess community educational needs as well as attitudes toward flexible schedules and interests in various types of courses. These data are used intensively for marketing training services (especially by the School of Continuing Education), as well as for revision, deletion, or addition of courses or programs.

Training Agreements for Customized Programs

Triton's customized training agreements with companies and trade associations are essentially contracts to deliver specific training. Many of these contracts are open-ended in terms of their ongoing nature.

Training agreements with trade associations that have their headquarters on campus are special, and grant certain mutually beneficial privileges to each of the participants. For example, the training facilities for the Society of Die Casting Engineers are to be used not only for the Society's own upgrading and training courses for its members, but also for one- and two-year entry-level training programs offered as part of Triton's career education curricula.

A variety of other training agreements involve cosponsorship and cooperation in conducting training courses with companies, trade associations, and other organizations and educational institutions.

Course Development

For noncustomized instructional programs, Triton makes strong use of its environmental scanning information, its advisory committees, and the expertise of its own faculty members (including adjunct faculty) to provide input for the design and development of courses or programs. In the School of Career Education, the program coordinators become involved in developing both noncustomized and customized courses. For example, in school year 1982-1983 the program coordinator for the Nuclear Medicine program will perform the following tasks related to program design and development, in addition to other duties:

- Revise [course] NUM 120 to include computer content.

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*Personal interview with Brent Knight, President, Triton College, 8 July 1982.

- Evaluate and identify clinical facilities to determine if changes within the hospital will impact upon the program.
- Coordinate activities of ten clinical institutions.
- Pursue expanded facilities to serve increased enrollment.
- Assume leadership role for Nuclear Medicine program.

For customized programs, design and development are often cooperative efforts between the College staff and company representatives. At other times, the College staff members prepare most of the course, often by modifying units of courses offered regularly at the College. In cases where the customized program is one that has already been developed and used by the company (or trade association) at its own training facilities, Triton staff members make what modifications are necessary to suit the College facilities or other specifications and to reproduce the training experiences according to the company or society's design.

The Job Training Institute frequently customizes a regular course to fit an accelerated structure, or revises it to make use of company-specific equipment or processes. Customized courses borrow freely from established courses, while maintaining the kind of flexibility needed to meet the needs of individual learners as well as of the particular firm or trade association. Most of the customized JTI courses make use of part-time (adjunct) faculty for instructors. These instructors are also frequently commissioned to work with the company and the College staff in designing and developing the courses. This arrangement is especially useful for highly technical courses utilizing changing technologies and equipment.

JTI and other deliverers of customized training at Triton usually require three months from the time that a customized course is requested until it is designed, developed, and ready for implementation.

Curriculum materials and content. In finding or devising curriculum materials and content, there is a long history of excellent cooperation among different schools and departments at Triton. The accelerated courses offered through JTI, for example, are often condensed versions of full-length courses offered in the School of Career Education.

Many courses—both noncustomized and customized, though especially the latter—are designed to include some basic skills components early in the course. For example, the Screw Machine program has a two-week mathematics and blueprint reading "brush-up" component so students are reasonably competent in reading micrometers and performing necessary calculations.

For customized courses, the content is cooperatively determined by the company or organization, the College administration, and the course instructors. In many cases, companies provide their own instructional manuals and/or materials for the course. An example is General Motors' arrangement with Triton for its mechanics apprenticeship training program. Although the students for the program are actually sponsored by individual dealerships, GM provides most materials (components) for training. Anytime a component is more than two years old, GM's policy is, "We want it back and we will replace it with the latest."

Selection of mode of instruction. Flexibility is the key principle in all instructional delivery, and the College endeavors to offer the highest quality instruction in whatever mode best suits students. For example, some courses are available in a modular, open-entry/open-exit structure

(such as the word processing lab, which allows students to come or go at will during operating hours). For some courses, the use of videotaped instructional materials allows modular learning at the students' own pace and time during a semester. Many courses are also available as telecourses (broadcast on cable television), and some have been offered as a series of lessons in a local newspaper.

Triton instructors make excellent use of adult education principles, particularly in the School of Continuing Education's courses and customized courses. Group process techniques are an important part of many courses. Instructors are expected to vary the teaching modes in order to keep interest levels up, and student input is solicited during the courses to help keep courses interesting and on track. Team teaching and interdisciplinary teaching are also important methodologies that add much to the interest and pertinence of Triton's courses.

Customized courses are carefully tailored to meet the needs of both the companies or organizations and the employee-students. For example, in the GM Apprentice Mechanics Training program, the instructional mode shifts back and forth over the duration of the program between on-campus instruction and hands-on experience at the students' sponsoring dealerships. In cooperative training programs with trade associations or societies that have their training headquarters on the Triton campus, even greater flexibility in instructional mode is possible. Practicing, experienced members of the societies are available to lecture to students (especially those in the School of Career Education programs) at Triton, and to share their insights and experiences. The on-campus society arrangements allow a uniquely close relationship between professionals and apprentices and between the College and industry.

Course Approval

Courses that grant credit must be approved by the department chairperson and/or program advisory board, and must also be approved by a curriculum committee made up of three to four administrators, three faculty, three support staff, and several students. This committee meets twice a month. If the course is approved by the committee, it goes to the president of the College and his cabinet, who review the curriculum and either pass or reject it. From there it goes to the Triton College Board of Trustees, who submit it to the Illinois Community College Board for final approval.

Many customized courses are not given for credit, but Triton obtains credit approval if a company requests it. As many customized courses are condensed or only slightly modified versions of approved, credit-granting courses at the College, course approval is usually not necessary in order to grant credit.

Funding and Budget

Most of the noncustomized courses delivered by Triton are paid for by student tuition and funds from the state and local taxes. Triton has made every effort to keep the costs of its programs and courses at the lowest possible level for area residents. In noncustomized courses given through JTI and EDI, companies or organizations sometimes send employees to take the courses and pay the tuition. In addition, some companies request noncustomized courses for delivery at the company site (e.g., English as a second language, mathematics courses, and other courses identical to those in career education or continuing education programs). In these cases, the company also pays the students' tuition.

Except for HITS training, customized courses are paid for entirely by the company requesting the course, whether it is delivered at the company site, on campus, or at another location. Costs for customized courses are calculated on a break-even basis (i.e., on the basis of the number of students attending and the costs to the College for running the course in terms of facilities, materials, instructor fees, etc.). Thus, the College charges the company only what it actually costs to run the program. Most customized courses are taught by adjunct faculty, who receive between fourteen and fifteen dollars an hour for teaching. As a result, instructor costs are often a large portion of customized course costs. Even so, Triton offers customized training at or just barely above the break-even point in order to deliver the most cost-effective training services possible.

Selection of Instructors

Recruitment and selection of instructors. Triton College retains a faculty with wide-ranging expertise in technical and related subject areas. Most faculty members in the School of Arts and sciences are full-time. About one-fourth of the faculty in the School of Career Education is full-time, with three-fourths being part-time or adjunct faculty. This ratio is about one to one in the School of Continuing Education. Triton's location in a heavily industrialized and major business area is a good one, as there are many persons with business or industrial expertise and hands-on experience available to serve as part-time instructors.

In the School of Continuing Education, the directors of some program areas deliberately select instructors so that an interdisciplinary instructional team is formed. Thus, team teaching (or "marrying the practitioner with the educator") is used to considerable advantage. For example, in the School of Continuing Education's Allied Health area, a medical social worker, a nurse, a physician, an allied health worker, an expert in nuclear medicine, an x-ray technician, a dietitian, and even a clergyperson may become involved in the interdisciplinary planning for a program as well as its teaching. A program area may have planning and instructional input from as many as ten different but related disciplines.

Instructors, whether full-time or adjunct, are chosen carefully, using interagency networking and recommendations from companies, advisory committees, and other knowledgeable sources. EDI uses primarily adjunct faculty—persons who are essentially consultants and who have extensive industry or business experience. JTI generally locates its own instructors (also primarily part-timers), whose selection is the responsibility of the JTI director. For many customized courses, the instructors are skilled employees of the company being served.

Instructor preparation and upgrading provisions. Triton makes numerous provisions and offers a variety of incentives to encourage both full-time and adjunct faculty to prepare for effective teaching and to upgrade their skills and knowledge. The usual, rather heavy teaching load for full-time faculty is fourteen to sixteen lecture hours, so staff development must be squeezed into instructors' schedules whenever possible. Four major workshops on teaching methods, tests, and measurement are held on Saturday mornings for faculty. Faculty are not required to attend, but receive a stipend as well as a small salary raise for completing the modules. In addition, "professional growth units" are given for "return to industry" experience to full-time faculty who use their summer vacations or sabbaticals to acquire practical work experience in their specialties. In addition, each department gets a fund of $600 for faculty development, plus a $150 travel allowance per staff member for professional development purposes.

Part-time faculty have extensive faculty development programs available. One program pairs full-time faculty members with adjunct faculty in a mentor relationship. There are also "eat and meet" sessions for part-time faculty—a light dinner with a twenty-minute presentation just prior to evening classes. In addition, a computerized student evaluation of part-time instructors is administered at the end of every semester. These evaluations, according to the dean of the School of Career Education, are "an excellent device for screening and monitoring part-timers"* as well as for pointing out their need for further professional development (usually in the area of instructional techniques). Finally, part-time faculty in the School of Career Education are given an "instructor survival kit," which provides tips on teaching techniques and the like.

Scheduling, Facilities, and Equipment

Triton attempts to meet the diverse scheduling needs of adults through its flexible (and often innovative) course schedules. In school year 1981-1982, Triton offered a wide variety of class times, course lengths, and locations to meet student needs. Some of these options include the following:

- Early morning classes—the "Breakfast of Champions" courses—offered from 7:00 to 7:50 a.m. for those students who have regular daytime jobs.
- "Midnight College," which makes career education opportunities available between 11:00 p.m. and 4:00 a.m. This arrangement is especially useful for courses requiring use of equipment that is in high demand at other times of the day and for students who work second shift and would normally be unable to attend classes.
- Open-entry courses (such as the School of Career Education's Word Processing/Specialized Typewriting course) in which students can enroll and begin classes at any time during the year, and can choose their own class hours.
- "Tuesday-Thursday College," in which regular classes are scheduled into concentrated time blocks during the day or evening. This program allows students to earn an associate degree in one of four program areas in three years.
- Nine-week condensed courses, usually offered through the Job Training Institute, in which students meet for longer class sessions than they would for normal classes but cover the same course content as they would in a full semester.
- Telecourses broadcast a variety of times on a local TV station, at Triton, or at three nearby public libraries. Videotaped and radio courses are also offered, and a unique arrangement with the *Chicago Tribune* allows students to take courses via a series of newspaper articles.
- "Flexible Entrance Courses," which are organized into modules to allow students to enroll up to the midterm date of a semester, and then catch up on the modules at their own pace.
- Neighborhood classes, which include daytime and evening classes offered at extension centers such as area high schools.

*Personal interview with Vernon Magnusen, Dean of the School of Career Education, Triton College, 8 July 1982.

- "Family College," which offers courses on the weekends in which children and parents can learn something together, regardless of their age, thus allowing families to attend college together.

- Triton's accelerated basic certificate programs, which offer condensed courses and programs. These allow students to learn skills that are in demand by local businesses in a very short amount of time, while still covering all the content of full-semester courses. The accelerated courses are most often offered through the Job Training Institute.

- Registration at convenient locations such as in shopping centers and other locations.

Much of the equipment used in Triton programs is donated by area companies or organizations, who see the advantages in helping keep Triton's training facilities up to date. In the School of Career Education, where the up-to-date equipment is a particular need, program coordinators monitor the use, maintenance, and replacement of equipment as needed. Equipment replacement funds for most programs are drawn from the College budget, and typically amount to 10 percent of the entire budget annually. There is no state agency to provide a pool of equipment for state community colleges.

Triton's program of bringing societies and company training headquarters to the campus is one of its most potent strategies for providing the up-to-date equipment needed for its programs—particularly for new programs in emerging technologies. When such organizations locate their training facilities on campus, they generally provide or donate all equipment necessary for training in their specialties. As part of the College/society arrangement, such facilities and equipment are made available for noncustomized training by the College, as well as for customized training for the society or company.

Sharing facilities has been a problem, especially with the overlap of training areas between the various schools and institutes. As there is high demand for the use of certain labs and equipment (e.g., the word processing lab), Triton prefers to set up customized courses at company sites whenever possible.

Evaluation

Evaluation of courses and programs. Virtually every course, program, or seminar delivered by Triton is monitored in order to ensure that the program content, instructional methodology, and instructor are meeting the objectives and expectations of the sponsoring school or institute (or in the case of customized courses, of the company or organization that requested the course). In courses operated by the School of Career Education or the School of Continuing Education, deans and associate or assistant deans visit classes and periodically monitor them. In EDI, the program director monitors the opening of every seminar the Institute offers.

The School of Continuing Education's Center for Health Professionals recently pilot-tested a summative evaluation instrument that was administered in five arbitrary courses in order to determine (1) why students selected Triton for their training, (2) whether they came to the program voluntarily or because they were told to do so by their employers, and (3) what they planned to do with their training experience. This instrument will now be used widely to guide the selection and direction of future courses offered by the center.

The Employee Development Institute evaluates every one of its seminars by having participants fill out an anonymous evaluation at the end of the seminar. The evaluations provide

feedback on the effectiveness of (1) the instructor(s), (2) the programming and content, and (3) the facilities and administration. The evaluations also gather information related to future marketing of the same or similar seminars.

Customized courses have a specific formative evaluation component whereby an evaluation form is given to students halfway through the course. Instructors then use the feedback to modify the course or redirect it if the need is indicated.

Customized training courses also have a built-in summative evaluation, which students fill out at the conclusion of the course. Frequently, companies and organizations also conduct their own evaluation of the course's effectiveness. The College further relies on verbal feedback from companies and organizations to administrators such as the associate dean of business and technology, who maintains almost continual contact with area businesses.

Triton has a number of evaluation provisions for ensuring the quality of its instructors, including the monitoring of classes and seminars and the formative and summative course evaluations. Adjunct faculty are evaluated specifically through two methods: (1) a computerized student evaluation form administered at the end of each semester, and (2) evaluations of adjunct faculty conducted in the Career Education programs by full-time program coordinators. Each coordinator is responsible for evaluating a minimum of two adjunct faculty per semester in his or her specialty area, as well as for serving as an advisor to the department chairperson or associate dean on the hiring, evaluation, and retention of adjunct faculty.

Evaluation of industry services. As mentioned, Triton makes good use of informal feedback from area companies and organizations in evaluating its effectiveness in meeting area training needs. The College also conducts formal evaluations in order to guide its programmatic and service decisions and policies. Most of these evaluations are conducted through the College's Office of Research. An example of such a survey is the annual follow-up of occupational graduates. This survey is conducted by telephone, with all calls to graduates made in the evening to optimize response rates.

Although the state requires that community colleges conduct such follow-ups every five years, Triton conducts one every year in order to monitor changing employment opportunities for Triton graduates.

Short Courses

Besides the full-length and condensed courses offered by Triton, the College delivers hundreds of short courses—seminars, clinics, and workshops—for interested persons and for companies and organizations in the Triton service area and around the state. A great many of these courses are tailored to meet special short-term training needs to upgrade the skills and knowledge of employees in specific companies or organizations.

Customized seminars and courses are given at times and places most convenient to the participants or to accessing needed equipment. Logistics of seminars held on campus are arranged by Triton's seminar coordinators; logistics of those held elsewhere are arranged by the individual company or organization. The outline and objectives of customized seminars are negotiated between the requesting company or organization and Triton, but course instructors design the actual seminar content. Where appropriate and possible, seminars are cosponsored with other educational or professional organizations or institutions.

Quality instruction is clearly the key to successful seminars and workshops. Thus, Triton makes excellent use of the expertise of its own adjunct faculty and of consultants drawn from the community or through professional networks. Many seminars are team-taught with a variety of different speakers, who can provide interdisciplinary perspectives on the topic. For many customized seminars, instructors are drawn from the sponsoring company or organization itself. Consultants, unlike adjunct faculty, are contracted on a one-time basis for each seminar.

Most of the customized seminars and workshops conducted by Triton are offered through the Employee Development Institute, although any area of Triton (especially JTI and the School of Career Education) that is most suited to fulfill a customized seminar need will deliver such training. EDI runs between 120 to 150 seminars a year, a great many of which are not customized. Each noncustomized seminar is marketed individually with a brochure, and each brochure is mailed to the personnel and training directors of between ten to twenty thousand companies. Most of the customized seminars and workshops are developed from these contacts.

SUMMARY

Key Factors in Upgrading and Retraining at Triton

At Triton College, a wealth of key factors have combined in a dynamic climate to create an institution whose forward-thinking services in upgrading and retraining adult workers are most exemplary.

Some fixed factors have given Triton special advantage in establishing its exemplary programs for regional economic development. The location of the College is particularly good, as it is within the most heavily industrialized region of Illinois and within Chicago's suburbs. Another advantage is that the previous College president had mostly completed his own plans for establishing Triton College as a truly comprehensive community college. This has given the current president a solid base upon which to create his own new priority for greater involvement in economic development.

Triton has excellent linkages with the members of its own elected board of trustees, who in turn have good relationships with agencies and with legislators in both parties in the state capital. Triton's board encourages its economic development thrust and supports it with generous funding.

Triton maximizes its relationships with business, industry, government, and trade associations or societies by involving their leaders in College advisory committees. Such involvement is accomplished by bringing these persons in as part-time faculty or lecturers, and by literally delivering all kinds of training opportunities, customized and otherwise, to their doorsteps. Some very special relationships (such as the ongoing customized training programs for General Motors and the establishment of the headquarters for the Society of Die Casting Engineers on the Triton campus) have been vigorously pursued by the College. Advantages accruing to the College from such relationships include equipment donations, expert members for advisory committees, experienced part-time instructors, and scholarships.

Many key Triton administrators have extensive work experience in business or the trades. This gives the College an edge in dealing with companies, who can be assured that the College staff understands their priorities and "speaks their language."

The management style at Triton allows individual staff members to pursue their responsibilities and goals in their own ways. There is the freedom to pursue ideas, but also the pressure to develop and achieve. The free flow of ideas is backed by teamwork and cooperation, and staff members do not stand on protocol. Everyone (including the president) pitches in where he or she is needed according to individual competencies. Triton's "esprit de corps" ensures that responses to expressed community or company needs are met with enthusiasm and skill.

Strategic planning, environmental scanning, and creative marketing are intrinsic to Triton's development of its goals. Triton's strategic planning uses corporate methods. Triton also uses forecasting, supported by its environmental scanning and research surveys, to try to eliminate or avoid bureaucratic red tape (particularly in regard to funding sources) that can delay needed program implementation. The College planners constantly strive to stay ahead of the times in terms of curriculum needs, a strategy that well serves a College in the midst of such high-technology companies as Quasar and General Motors.

Strategic planning depends on determining which influences will change and which will remain in the coming years and on adjusting the College's development efforts accordingly. The College has a separate Office of Research, which conducts formal and informal surveys of changing elements in such arenas as employment and education. The College's informal environmental scanning is the responsibility of all staff, but especially of the administrative staff, who are expected to "keep their ears to the ground" regarding changes in their specialty areas. As the director of the Office of Research points out:

> Our environmental scanning frequently has us ahead of a lot of businesses in terms of what might be coming down the road. They may not be capable of investing in the kinds of advancements that we already know are eventually going to be either adopted by them or will drive them out of business . . . things like CAD/CAM technology. . . . In a sense we are more up to date on that than a lot of businesses.*

Use of such forecasting techniques allows Triton to bring training courses into operation as soon as they are needed—a vital service for companies whose capital investments are stretched to their limit to buy new technologies and whose solvency depends on making those new technologies work for them as quickly as possible.

Triton puts more resources into its marketing than most other educational institutions, although its investment is small compared to what a profit-making organization would invest. Triton staff members see marketing as the College's key to economic development efforts because it gets the word out about what the College is doing, what it has done, and what it is capable of doing.

A major part of Triton's marketing makes use of the College's consistent credibility in serving the training needs of business and industry. By marketing itself as a regional center for high-technology training, Triton places itself in a position to get some things that a typical community college cannot get. Triton is striving to become an institution that, should a company plan to donate equipment or scholarships or to request customized training services, will be considered as a primary site. Much of Triton's formal and informal marketing has promoted the notion that "when people think of economic development in the greater Chicago area, they think of Triton College."

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*Personal interview with David Prendergast, Director, Office of Research, Triton College, 8 July 1982.

Triton's marketing approach is aggressive and slick. Reputation, credibility, commitment, and creativity are emphasized in all of the College's press releases, publications, and other promotional activities. Methods employed include direct mail marketing with telemarketing follow-up, marketing through newspapers and radio, expert use of publicity, and immediate follow-up on all contacts and commitments. The College's promotional success is supported by a talented marketing and graphics staff.

Of course, all of Triton's marketing evolves from the College's excellent and innovative delivery of training. Triton delivers what it promises, and College staff members make good on commitments even if there are some miscalculations. Staff members follow up on training arrangements and make them work, even if personnel or equipment costs exceed expectations.

The delivery of training programs is highly flexible, and the College has a policy of being willing to try new things in order to meet the needs of adult learners. Videotaped modular courses that can be taken at the students' own pace over a semester are just one example of this responsiveness. Triton will also take its courses and seminars wherever is most convenient for the students.

Scheduling flexibility is one of the most pronounced factors in Triton's policy of service. Unique scheduling plans include the Midnight College, "Breakfast of Champions," express courses, and Tuesday-Thursday College, as well as telecourses and newspaper courses. Triton also makes registering for courses fast and easy through registration on campus by telephone, and in local shopping centers and other convenient locations.

Two unique ways of delivering upgrading and retraining to adult workers are through the training programs offered by Triton's Employee Development Institute and its Job Training Institute. EDI is a separate institute in the College that delivers generic and customized seminars and short courses to upgrade employed adults' work skills. These seminars and short courses are held in offices and plants as well as on campus. JTI is also a separate institute that offers accelerated courses (100-300 hours) that teach entry-level skills for high demand jobs. JTI courses are created or dropped according to fluctuations in regional demands for those skills. JTI training includes a placement service, which has a 70 percent placement rate. Although JTI and EDI incorporate some training ideas that appear in many other community colleges, the fact that both are independent institutions within the College, with their own specified focuses, is an innovative concept in training.

The School of Continuing Education and the School of Career Education also deliver customized training on request. In essence, these two schools are involved in creating and delivering customized training for business and industry at four levels: (1) college seminars/courses used as they are or slightly modified to the needs of the company or organization requesting the training, (2) seminars/courses tailored or developed cooperatively to meet the company's specific needs, (3) seminars/courses sponsored jointly with a company or organization to meet its needs, and (4) customized training for a specific company or organization that is housed in a permanent training installation on the Triton campus (e.g., the Society of Die Casting Engineers' headquarters). Triton tries to offer the greatest flexibility in order to meet the needs of each particular company or organization.

Creating and developing continuing training relationships with organizations with ongoing training needs, such as GM or the Society of Die Casting Engineers, are not new ideas. However, having societies and associations locate their training facilities (and even their entire headquarters) on a campus is unique. Not only have these new relationships brought new facilities, equipment, expertise, and scholarships to Triton, they have also become a major way of

attracting other societies and industry training contracts. The reaction of many company and society representatives who visit Triton has been, "We had no idea that community colleges had this sort of thing going on!"

Triton takes all customized training very seriously. Basic skills components are inserted in almost all customized courses as "brush ups" for adult learners. Triton also considers good instructors to be a vital part of training. Faculty and consultants who teach the customized seminars and courses are "the cream of the crop," not only in terms of their expertise, but also in terms of their teaching abilities.

Part-time faculty and consultants are usually brought in to teach customized courses, because full-time faculty already have heavy work loads, and because having a large pool of part-time faculty and consultants greatly extends the College's ability to be flexible in meeting industry's needs. Triton also develops the capacities of its part-time faculty through instructional methodology seminars, "eat and meet sessions" before evening classes, assistance from full-time faculty members, and an instructor's survival manual containing teaching tips and other useful information.

Overall Success of Triton's Approach

Triton has already begun to fulfill a number of its goals related to economic development. The Job Training Institute and the Employee Development Institute—innovative concepts whose creation involved considerable risk—are operating efficiently and effectively. The president's vision of an "Avenue of the Societies" on campus is well under way, with more trade associations inquiring about or in negotiation with Triton for location of their training facilities and/or headquarters at Triton. New program areas, such as the Laser/Optics program, are being developed and put into place according to the training needs predicted by Triton's environmental scanning. Negotiations are underway for yet more new programs, including a CAD/CAM facility.

In over fifteen years of providing customized training, Triton has upgraded the skills and knowledge of over twenty-five thousand adult workers. In 1981 alone, EDI delivered over 166 different training packages to sixty-three different organizations, and trained over twenty-two hundred adult students. The College has established large, ongoing training contracts with a number of major corporations, including Quasar and GM. The College attracts over two thousand students a year from the city of Chicago, even though the city is out of Triton's district and tuition for Illinois residents outside the district is substantially higher than for district residents. In fact, student evaluations of Triton's seminars have consistently shown that most students come to Triton for training because of the quality of the instruction—not because of the College's accessibility. Through all this, Triton has managed to keep its costs to students and to companies and organizations low.

OVERVIEW OF THE COLLEGE AND SETTING

South Oklahoma City Junior College (SOCJC) is the largest institution of higher education in Oklahoma City. It was founded in 1972 to serve the southern half of the city. This is a large, spread-out area containing a sizeable industrial and business component as well as residential neighborhoods. About 60 to 70 percent of the College's students come from Oklahoma City proper and 90 to 95 percent from the Standard Metropolitan Statistical Area, which includes five counties. The oil industry has a strong effect on the economy of the city, and in the first half of 1982, that industry was still healthy, as reflected in a low 5 percent unemployment rate.

The College is noted for its accountability and flexibility in responding to the needs of individuals and companies in its service area and beyond. The College's programs, services, and environments are learner and learning centered. The competency-based approach is applied to both education and management of the institution. The performance of all those associated with the College—whether students, or faculty, or administrators—is evaluated against the goals and objectives set for them.

The architecture of the College reflects its philosophy through open landscaping of offices, classrooms, and service centers. This is intended to enhance accessibility and communication and to provide flexibility in programs and services.

OVERVIEW OF STRUCTURE FOR UPGRADING AND RETRAINING

State-level Structure

Although SOCJC was formed in 1972 as a technical education district, new legislation in 1974 made it part of the state's system of higher education. As such, SOCJC is under the governance of the Oklahoma State Board of Regents for Higher Education. The State Board of Regents oversees twenty-six colleges and universities. Coordination—is provided at the state level under the State Regents, with emphasis in the areas of functions and programs of study, standards of education, and finances. Operation and management responsibility for each institution is vested in a governing board of regents at the local level.

Oklahoma has received national recognition for its effective system for attracting new industry to the state. This is a well-coordinated effort among the Oklahoma Office for Economic Development, the Oklahoma Vocational and Technical Education Department, the Governor's Industrial Team, and local chambers of commerce. Junior colleges are not included as active members of this team. However, once new industries are established and operating in Oklahoma, they have a continuing need for upgrading and retraining, and the community junior colleges are responsive to this need. They see this recurrent training as an important part of their mission.

Institutional Structure

Organization of the College

South Oklahoma City Junior College (SOCJC) is under the immediate jurisdiction of a local board of regents. This board is composed of seven members who are appointed by the governor with the advice and consent of the state Senate. The board members serve seven-year overlapping terms. The board of regents selects the college President and approves all full-time professional personnel appointments. The president is the chief administrative officer of the governing board for operation of the institution. As such, he makes recommendations in the following areas to his governing board: (1) the appointment of faculty and staff, (2) contracts for other services needed, and (3) management and acquisition policy. The president himself assumes responsibility for leadership in the general administration of the institution.

For the last eight years, SOCJC has been under the presidential leadership of Dr. Dale L. Gibson. During his tenure, the College has undergone very rapid growth, has established a distinctive identity based on its untraditional approach to education, and has achieved accreditation from the North Central Association of Colleges. Early in Gibson's presidency, the College earned a five-year accreditation from North Central, and in its second evaluation by that agency in 1981 it received a ten-year accreditation approval (the maximum time granted by the Association). One of Gibson's major contributions as president of SOCJC has been to establish a systemized management program that allows faculty, staff, and students to be involved in establishing the direction of the institution.

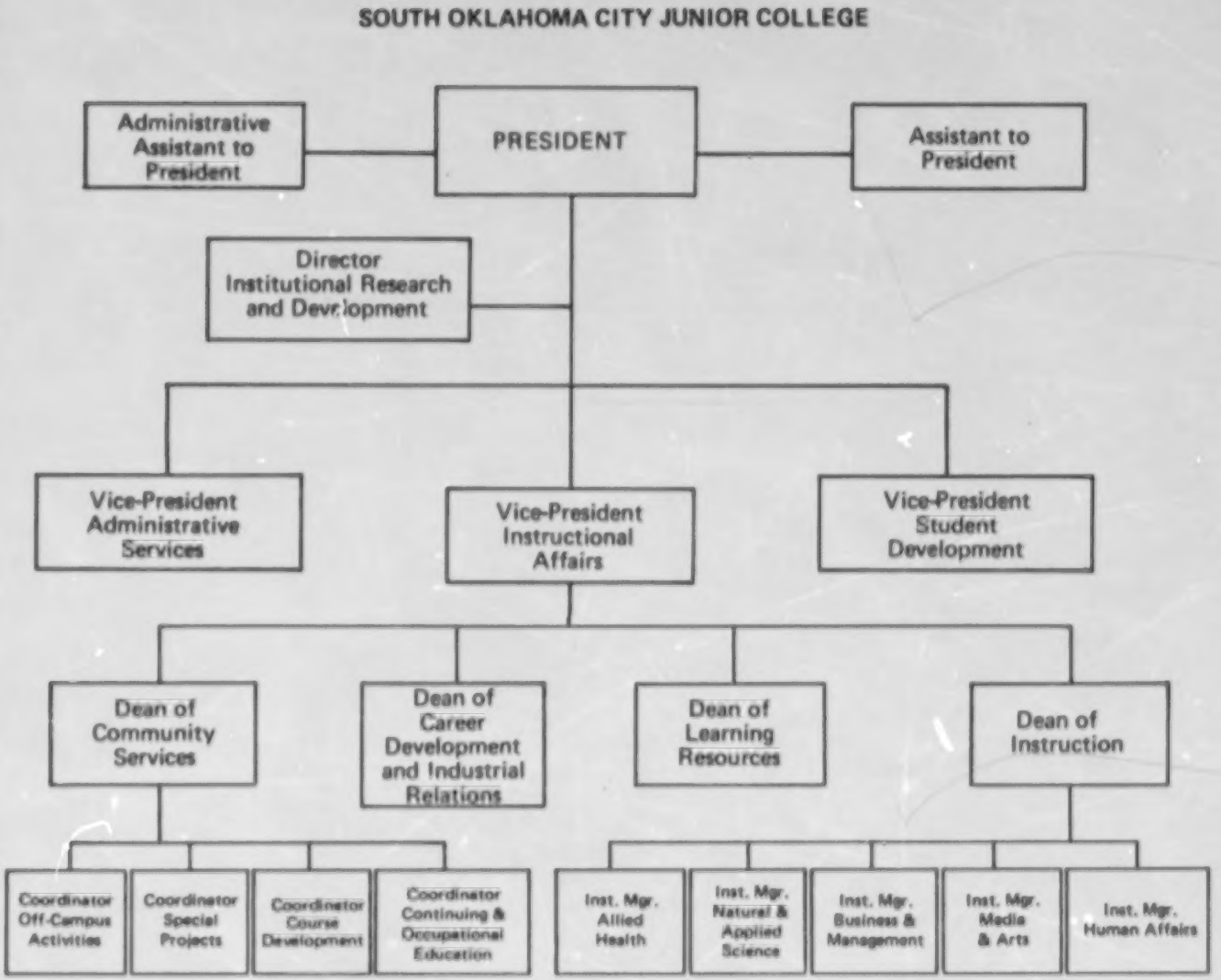
The president has three vice-presidents reporting to him: the vice-presidents for administrative services, instructional affairs, and student development (see figure 23). Activities relating to economic development and to upgrading and retraining for industry occur under the vice-president for instructional affairs. Reporting to the vice-president for instructional affairs are the dean of career development and industrial relations, the dean of community services, the dean of instruction, and the dean of learning resources.

The dean of career development and industrial relations is the top-level administrator responsible for establishing contacts with executives in industry and coordinating the various College units and persons supplying educational services to industry. This is a College-wide developmental and coordinating position, more of a staff position than it is one of line responsibility. Such a position is necessary at this level because of SOCJC's decentralized approach to providing customized training for industry. It is under the dean of community services, however, that the coordinator for continuing and occupational education is placed, who is the main staff person working with industry to serve its upgrading and retraining needs.

There are five training institutes in the jurisdiction of the dean of instruction: the Institutes of (1) Allied Health, (2) Natural and Applied Sciences, (3) Business and Management, (4) Media and Arts, and (5) Human Affairs. The faculty members under the five institute managers do much of the teaching in the customized courses for industry. These key people are committed to providing quality education and training programs to further the economic development of their community and to improve the well-being of the people they serve.

Mission of the College

South Oklahoma City Junior College has as its philosophy the desire to provide accessibility, comprehensiveness, flexibility, quality, and accountability in all its programs. The purposes of


SOUTH OKLAHOMA CITY JUNIOR COLLEGE
Administrative Assistant to President
PRESIDENT
Assistant to President
Director Institutional Research and Development
Vice-President Administrative Services
Vice-President Instructional Affairs
Vice-President Student Development
Dean of Community Services
Dean of Career Development and Industrial Relations
Dean of Learning Resources
Dean of Instruction
Coordinator Off-Campus Activities
Coordinator Special Projects
Coordinator Course Development
Coordinator Continuing & Occupational Education
Inst. Mgr. Allied Health
Inst. Mgr. Natural & Applied Science
Inst. Mgr. Business & Management
Inst. Mgr. Media & Arts
Inst. Mgr. Human Affairs

July 1982

Figure 23. Organizational Chart for South Oklahoma City Junior College

the College are a direct outgrowth of its philosophy. The stated purposes stress retraining or recurrent education and emphasize the importance of lifelong learning and the College's commitment to being accessible throughout that process. In describing the College's commitment to quality, the *1982 College Bulletin* states that "this commitment requires excellence of personnel, programs, and facilities and must be measured by strict accountability" (p. 4). This is accomplished by establishment of yearly objectives and the evaluation of their accomplishment.

Funding for the College

Capital funds for SOCJC are provided through general obligation bonds approved by the voters, revenue bonds, State Capital Fund appropriations, local tax revenues, and grants. There are three main sources for educational and general operating funds. These are (1) the *ad valorem* tax of property owners in the College technical district, (a source that may be used for either general operational *or* capital funds); (2) state appropriations received through the Oklahoma State Board of Regents for Higher Education; and (3) fees charged to students on a per-credit-hour basis. Other financial sources are the student service fee and funds from three College enterprises—the Game Room, Food Service, and the Student Store.

The costs of customized training for industry are paid by the company being served. Noncredit courses are paid for on a cost-recovery basis. For in-plant credit courses, the payment may be to cover the tuition of the company's employees in the course; the same holds true for employee enrollment in on-campus courses that are covered by a company's tuition reimbursement policy.

The preparation of SOCJC's budget for each fiscal year begins in early fall and is designed to draw input from all College areas in order to determine the new fiscal year's needs. The local board of regents reviews the budget request in the late fall and submits an estimate of needs to the State Board of Regents for Higher Education. The State Board of Regents then develops a funding request for all institutions of higher education in the state. The state legislature's appropriation is made to the State Regents as a total amount, which is then apportioned by the State Regents to the individual institutions. The amount per institution is based on the number of full-time equivalent (FTE) students. Because the economic condition of the state has been strong, funding for higher education has been very satisfactory.

Distinctive Features of the College

South Oklahoma City Junior College is a young college—only ten years old at the time of this study. It was created in a "fast track" construction mode and has been growing rapidly ever since. At this stage it is maturing, making changes, reorganizing to solve fast-growth problems, and beginning to move in directions appropriate for a healthy community-based college. This maturing is reflected in SOCJC's current goal of expanding its services to industry and in the formation of a task force to make recommendations for achieving this goal. Throughout this period of maturation, the College has remained true to its basic philosophy of providing accessibility, comprehensiveness, flexibility, quality, and accountability.

SOCJC has an exemplary goal-setting process that involves everyone affiliated with the College (see figure 24). This College-wide planning system is one of the achievements of President Gibson. Each spring the College's director of institutional research and development solicits concerns from all of the College's various constituencies. A form for submitting concerns

is published in the student newspaper to get input from students, and meetings are held with student government members. Both full-time and part-time faculty members are also provided forms and asked to list their concerns. Administrators are involved in the same way. Advisory committee members communicate their concerns through the appropriate Institute (department) managers. An annual midyear retreat is held for the local board of regents members to get their recommendations. This accumulation of concerns is an excellent way to identify problems and find solutions as well as point to new thrusts for the College.

After the concerns of all constituencies are collected, the director of institutional research and development groups them into the following four categories: (1) student concerns, (2) instructional concerns, (3) administrative and management concerns, and (4) personnel welfare concerns. In March a workshop is held to combine duplicative items and to prioritize items. The following persons are involved in this workshop: all management personnel, one faculty member from each institute the president of the faculty association, six to eight students, and four members of the classified staff. The final result of the workshop is a prioritized list of concerns representative of the whole institution.

A two-day management retreat is held in April to develop a final list of about ten institutional goals based on the prioritized list of concerns. These goals are recommended to the local board of regents for final approval. Each institutional goal is assigned to a particular vice president or to the president; this person is then held accountable for its achievement. The extent to which goals are attained is a factor in the evaluation of individuals and units. Each faculty member and each administrator sets his or her own goals to be accomplished during the year. This method of personnel evaluation is based on the attainment of stated goals and objectives, much like the College's competency-based instructional system.

This competency-based approach to education has been a hallmark of the College from the beginning. Initially the College provided open-entry/open-exit, individualized, competency-based instruction. There are now seven points in time during the year when students may begin classes; furthermore students now have a choice of individualized, group-paced, or multiple-paced (a combination of the two) instruction. Each course is divided into modules, with clearly specified learning objectives for each module. Objectives tell students what they will be able to do, how learning will be demonstrated, conditions under which testing will occur, and the criteria against which they will be evaluated.

The architecture of the College is another distinguishing feature. Located on 143 acres on the southern edge of Oklahoma City, SOCJC's main facility is a large, three-story structure with connecting buildings. The main building contains 266,500 square feet with an open-landscape interior that provides easy student access to faculty and also facilitates communication among staff. Colorful acoustical panels form walls around classrooms and offices. Everything from the president's office to the cafeteria and Learning Resources Center follows this open design. This reflects SOCJC's philosophy of accessibility and flexibility.

Structure for Economic Development

South Oklahoma City Junior College serves existing companies in its area, as well as those industries that become established in Oklahoma through the state's thrust for economic development. There is a continual need for upgrading and retraining of local workers, and as more industries are brought into the area, the College's services are increasingly in demand. However, as a junior college under the State Board of Regents for Higher Education, instead of the State Department of Vocational and Technical Education, SOCJC is not a member of the

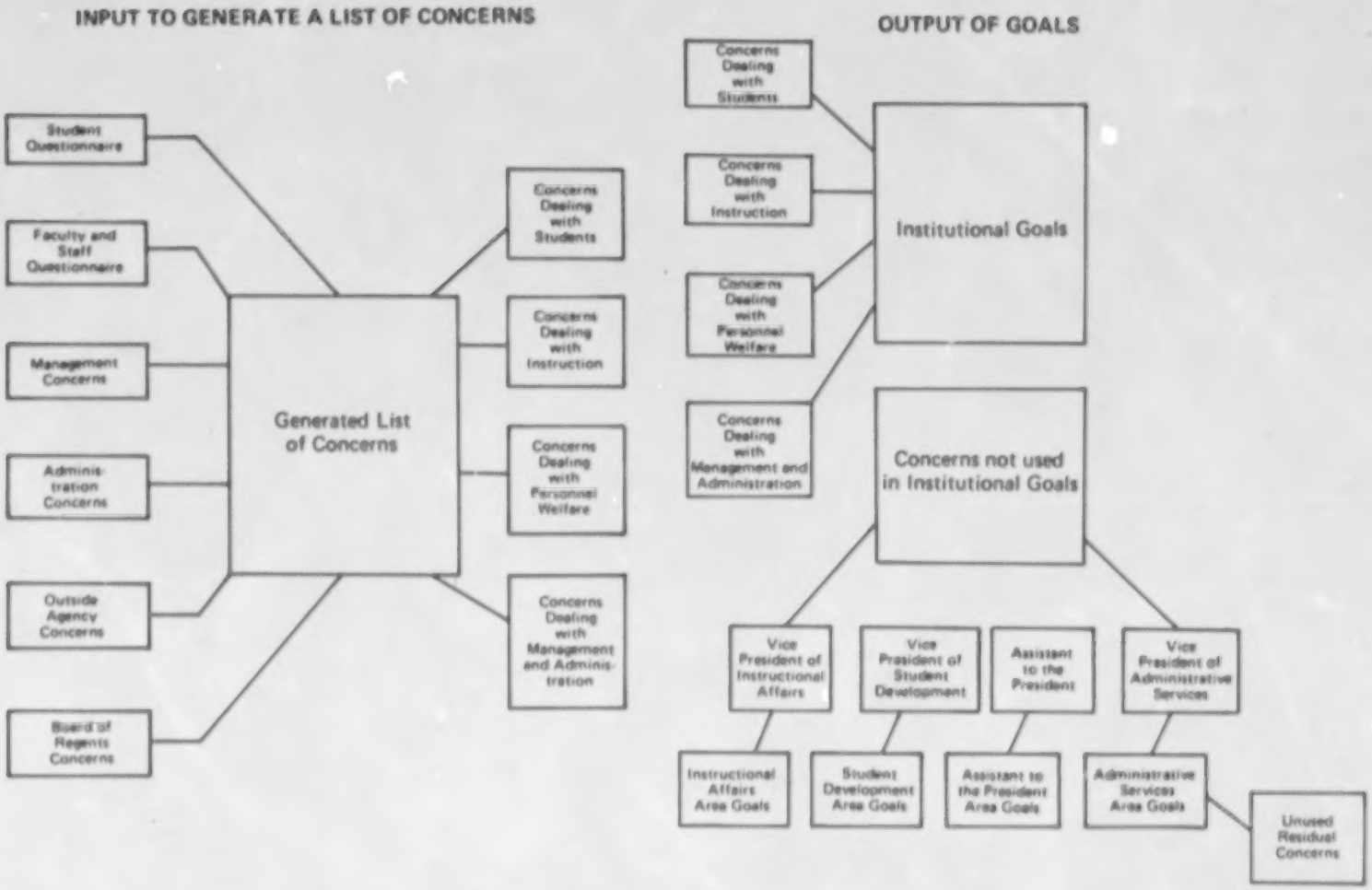

INPUT TO GENERATE A LIST OF CONCERNS
Student Questionnaire
Faculty and Staff Questionnaire
Management Concerns
Administration Concerns
Outside Agency Concerns
Board of Regents Concerns
Generated List of Concerns
Concerns Dealing with Students
Concerns Dealing with Instruction
Concerns Dealing with Personnel Welfare
Concerns Dealing with Management and Administration
OUTPUT OF GOALS
Concerns Dealing with Students
Concerns Dealing with Instruction
Concerns Dealing with Personnel Welfare
Concerns Dealing with Management and Administration
Institutional Goals
Concerns not used in Institutional Goals
Vice President of Instructional Affairs
Vice President of Student Development
Assistant to the President
Vice President of Administrative Services
Instructional Affairs Area Goals
Student Development Area Goals
Assistant to the President Area Goals
Administrative Services Area Goals
Unused Residual Concerns

Figure 24. Organization of Goal-setting Process for SOCJC

coordinated economic development team that provides free start-up training for new industries. This team is composed of the Oklahoma Vocational and Technical Education Department, the Governor's Industrial Team, and the Oklahoma Office of Economic Development.

The companies for whom SOCJC provides upgrading and retraining finance such services themselves. This is either through a direct cost-recovery payment for customized training or through payment of the tuition of their employees for credit courses.

Interfacing with Local Agencies

South Oklahoma City Junior College works closely with various local organizations and agencies, such as chambers of commerce, governmental agencies, and trade and professional associations. One important working relationship is with the South Oklahoma City Chamber of Commerce.

There has been a long, close relationship between the South Oklahoma City Chamber of Commerce and SOCJC. The Chamber, established in 1905, was instrumental in the creation of SOCJC. In 1970 the Chamber circulated petitions to have a college created in South Oklahoma City and worked with the legislature to bring it about in 1972.

During 1982 the president of the College, Dr. Dale Gibson, was also elected president of the Chamber of Commerce. He has provided strong leadership for the business community and has created active interaction through Chamber channels between the College and the business sector. Other administrators and faculty members of the College have also been actively involved in Chamber of Commerce activities. Dudley Freeman, dean of community services, was a member of the Chamber's Business Assistance Committee. He also chaired the Chamber-sponsored Fall Arts Festival held at the College on Labor Day weekend; the Festival brought over one hundred thousand people to the campus. The executive director of the Chamber, Gene Ramsey, has stated that every committee of the Chamber has a member from SOCJC.

Following a needs assessment by the Business Assistance Committee, the Chamber sponsored a series of business assistance classes and seminars for Chamber members. These courses were developed and conducted by SOCJC at the Chamber building. The Chamber and the College have cosponsored numerous other courses. The Chamber also publicizes courses for business and industry in its newsletters, as well as maintaining a display that provides brochures about College programs in the lobby of its offices.

College Structure for Upgrading and Retraining

Community Service Center—
Business and Industry Coordinator

The main College unit for providing special training for industry is the Community Service Center, under Dean Dudley Freeman. He supervises the coordinator of continuing and occupational education, Leonard Smoot. It is the Continuing and Occupational Education Office that is in direct contact with companies in the Oklahoma City area. Leonard Smoot calls on industry on a daily basis and works with them to ascertain their specific needs; he then secures the resources of the College to respond to those needs. (See the job description for this position in figure 25). Smoot's position is usually often referred to as the business and industry coordinator, although this is not the official title.

JOB DESCRIPTION
COMMUNITY SERVICE COORDINATOR
(BUSINESS AND INDUSTRY)

JOB FUNCTION

The community service coordinator for business and industry (i.e., business and industry coordinator) is responsible for assisting business and industry in the identification of needs for educational training and subsequently designing, implementing, monitoring and evaluating those training programs.

SUPERVISION

The community service coordinator for business and industry is accountable to the dean of community services.

JOB DUTIES

The omission of specific statements of duties does not exclude them if the work is related to or necessary for the successful completion of an assignment.

The following statements of activities represent an outline of professional employment for a given year. As specific needs are identified, assignments to meet these needs will result in tasks and objectives to be agreed upon by the dean of community services. Generally stated, duties are to:

- identify topics for program development addressing business and industry training needs;
- work with business and industry representatives to develop training activity objectives and content appropriate to meet identified needs and implement these at the appropriate time and location;
- adequately monitor the progress of activities;
- provide participants, instructional personnel, and cooperating agencies the opportunity to evaluate the quality and effectiveness of activities and the means of doing so;
- represent the College in business- and industry-related cooperative arrangements; and
- when developing and implementing activities, conform to the College's established policies concerning systems approach to instruction, appropriate interaction with faculty and staff, adequate interdepartmental communication, and other policies that are applicable.

Figure 25. SOCJC's Business and Industry Coordinator Job Description

The College takes a decentralized approach to designing and implementing tailored programs for industry. SOCJC administrators believe that the resources and expertise of all units in the College should be available to serve industry's special training needs. This requires that the College's business and industry coordinator have good working relationships with deans, institute managers, and faculty members throughout the College. It also requires that these persons have a high degree of trust and confidence in the coordinator.

The business and industry coordinator sets forth his objectives (these are listed in figure 26) for fiscal year 1983, as all faculty members and administrators do each year. As noted in his eighth objective, this office has a Business/Industry Advisory Committee. The College itself has an advisory committee, as do all occupational programs in the College. These advisory committees provide excellent avenues through which to reach out into the business community and open up many opportunities to provide customized training.

Decentralized System for Industry Services

In a decentralized system for industry services, it is essential to have the support and cooperation of administrators and faculty members. There are many positive factors bringing this about at SOCJC. Of utmost importance is the active support of the president and the vice-president for instructional affairs. Many persons involved in industry services have stated that they receive strong support from the top, and that the president helps to remove barriers and achieve institutional flexibility, particularly when internal budget flexibility is needed.

Another strong incentive for faculty involvement and support is related to the College's marketing plan and its system for setting objectives and measuring performance against them. The funding from the state is tied to the annual number of full-time equivalent (FTE) students. Consequently, goals are set for the number of FTEs that each institute (department) within the College is to generate for the year. The same is true for each faculty member and administrator. At evaluation time, each unit and person is assessed (along with many other factors) as to whether or not they met their goals for FTEs. This responsibility is written into job descriptions.

Business and Industry Task Force

Intensive work during school year 1981-1982 focused on developing and implementing programs for three special target groups. One of these target groups was the business and industry community. A midyear task force was formed to develop recommendations for increasing the services SOCJC provides for Oklahoma City companies.

The task force recommended the establishment of a Business and Industry Development Center, and the setting of objectives and desired outcomes for the next fiscal year. The task force believed that such a center would give clearer identity to industry services and attract more industry to the College. The center would probably be administered by Community Services, where the present business and industry coordinator is located.

Although there was a recommendation to establish such a center, the task force made it equally clear that the decentralized approach should be continued in designing and implementing industry services activities. A solution was presented to the sense of fragmentation that decentralization has created, and this has been implemented in the fall of 1982. The solution is to place at a high executive level within the College the responsibility for internal coordination of all persons and units involved in providing special courses for industry. The former dean of

OBJECTIVES FOR FISCAL YEAR 1983
CSC COORDINATOR FOR BUSINESS AND INDUSTRY

1. Continue efforts to identify training needs of business and industry with emphasis on working closely with the dean of career development and industrial relations and other appropriate institutional personnel.
2. Actively support the successful completion of the institutional goals, the Instructional Affairs goals, and the Community Service Center goals.
3. Promote a business and industry community attitude to College personnel by including staff in programming input, instructor identification, and attendance at business and industry seminars for evaluation input and professional development.
4. Coordinate the AACJC/SBA grant in accordance with grant provisions (program at least 15 activities for the remainder of 1982.)
5. Continue to expand personal marketing activities to include working with the Chamber of Commerce, involvement with professional organizations such as the ASTD, and continue expansion of personal contacts with business and industry personnel.
6. Work toward increased growth without increasing expenditures of resources by utilizing resources of other agencies for promotion, promoting programs through professional organizations' newsletters (Chamber of Commerce, insurance newsletters, etc.) and improving publicity and elimination of excessive mailings.
7. Monitor all activities for purpose of quality control.
8. Continue to maintain and revise as needed a Business/Industry Advisory Council.
9. Continue to develop personal and professional skills by participating in the College's staff development programs and other such opportunities.
10. Serve as a volunteer for the Fall Arts Festival.

Figure 26. Objectives of the SOCJC Business and Industry Coordinator for FY 1983

JOB DESCRIPTION
DEAN OF CAREER DEVELOPMENT AND INDUSTRIAL RELATIONS

JOB FUNCTION

The incumbent is responsible for developing and evaluating the College's technical educational programs and for directing the College's interaction with business and industry in the greater Oklahoma City Area.

SUPERVISION

The dean of career development and industrial relations reports to the vice-president of instructional affairs.

JOB DESCRIPTION

(The omission of specific statements of duties does not exclude them from the position if the work is similar, related, or a logical assignment to the position.)

1. Develop and maintain contacts with middle- and upper-level management of Oklahoma City business and industry and promote the College's technical educational services in the College service area.
2. Develop and maintain contacts with other agencies and institutions involved in technical/ocupational education.
3. Direct institutional liaison with area business and industry, including:
   a) manners and means of institution's presentation of its services to the community; and
   b) assignment to appropriate institutional personnel responsibility for carrying out special educational services and programs.
4. Operate a master advisory committee made up of area business and industrial personnel for determining long-range educational and training needs of the community.
5. Present to the business and industrial community the College's needs for capital support, including supplies and equipment, and secure donations when possible.
6. Direct evaluation of career programs.
7. Direct the program advisory committee process.
8. Conduct feasibility studies for potential career programs and develop (in concert with institute managers) initial curriculum for new programs.
9. Direct planning and prioritizing of space and equipment needs for Instructional Affairs.
10. Assume additional responsibilities as assigned by the vice-president of instructional affairs.

Figure 27. Job Description of SOCJC's Dean of Career Development and Industrial Relations

career development now has the additional responsibility for industrial relations, and the position is called dean of career development and industrial relations (see figure 23).

The job description of this position is presented in figure 27. The dean of career development and industrial relations has the broad responsibility for interacting with industry in all the College's activities with that constituency. This responsibility also contains significant marketing and resource development components. Of greatest importance, though, is that the dean now has the authority to assign needed faculty and financial resources to carry out specific projects for industry.

Decisions still have to be made on whether the dean of career development and industrial relations has line or staff authority, and whether the present business and industry coordinator is most appropriately placed under the dean of community services or the dean for career development and industrial relations. A new staff member has been selected from a national search for this expanded deanship, and a new College president has been appointed to begin in the fall of 1982. Therefore, the industry services structure will undoubtedly be subject to further change and refinement. In fact, the Business and Industry Task Force specified that fiscal year 1983 should be a year of study and decision, and the institutional goals for school year 1982-1983 identify industry relations as a priority.

Regular Technical Education for Occupational Advancement

The educational programs and activities at South Oklahoma City Junior College are incorporated into five institutes, the Learning Resources Center, and the Community Service Center. The five Institutes are Business and Management, Allied Health, Human Affairs, Natural and Applied Sciences, and Media and the Arts.

There are two types of degree programs, preparatory and immediate job-entry. Preparatory programs are designed for students who plan to transfer to a four-year institution. The immediate job-entry programs are for students who wish to enter or continue in a career immediately after graduation. Some immediate job-entry programs offer a certificate requiring fewer than sixty credits, whereas others provide associate degrees. There are thirty-nine immediate job-entry programs covering seven broad areas. These areas are management, marketing, mass communication, human services, health, engineering, and manufacturing.

SOCJC has an educational system based on performance. Students select a performance level, depending on individual and educational goals. They work through a course toward fixed, measurable objectives. This is particularly advantageous for adults wishing to upgrade their competencies.

The accessibility and flexibility of career programming at the College and the straightforward, competency-based approach facilitate the further education of adults who wish to retrain for another job or upgrade to a better one. The average age of students is over thirty, and the large majority of them are working part-time or full-time while pursuing their education. Sixty percent of the students attend classes in the evening.

CUSTOMIZED TRAINING PROGRAMS AT SOCJC

The coordinator of business and industry training, Leonard Smoot, has a loyal following among local companies and receives much "repeat business." A representatives of one of the firms he has served voiced a common viewpoint with the statement that "Leonard understands our needs, will follow through, and will take good care of us." They look upon the College as an important resource for their companies. The following brief descriptions are typical of the kinds of companies served and the training services offered.

Star Manufacturing

Allen McCollum, currently the personnel manager at American Fidelity and Assurance Company, is a strong supporter of the College and what it can do for his company. This is the third company in which he has worked as personnel manager where he has used the customized training services of SOCJC. This personal manager's "repeat business" with the College is based on his confidence that the College industry coordinator will oversee the training process so that the company's workers get the training they need. McCollum first used the College's training services when he was at Boeking Machinery, then later at Star Manufacturing, and now at American Fidelity.

When he was at Star Manufacturing, McCollum was very involved with the College. A lot of his employees were taking advantage of the company's tuition refund program through enrollment at SOCJC. Also, he had a great deal of contact with the College's placement office, as well as being on an advisory committee for the Secretarial Program. So it was natural to call upon SOCJC for customized training when the need arose. College staff, together with the personal director and other Star Manufacturing representatives, developed a special maintenance training course to upgrade present maintenance employees and to help others move into the maintenance department. The program was conducted in the evening at the company and had five major components: math, measuring instruments, electrical instruction, mechanical instruction, and safety. Star provided the course for no cost to the students who were taking it on their own time.

Cost was figured in terms of contact hours, and credit could be earned if desired. Star Manufacturing specified the skills and behaviors to be achieved and helped select the instructor. All planning contact with the College was with the business and industry coordinator and later, with the selected instructor.

McCollum states that a very critical element for the success of this course was the involvement of key people in the plant in planning and monitoring the instruction. He and the maintenance supervisor sat in on the classes. Also, in the planning phase, the instructor was brought into the plant to become familiar with the equipment, systems, and policy; the instructor worked closely with the maintenance supervisor during this process. In this way the new training was not threatening to the maintenance supervisor, and the instructor received the needed orientation to the company. It was during his previous experience at Boeking Machinery that McCollum learned the importance of this procedure, for problems resulted there because plant supervisors were not involved.

McCollum listed three items that he feels are important to have in a successful training course offered for employees:

1. A good relationship between the college instructor and plant supervisor
2. An incentive or reward for employees for taking the course
3. Trust between employees and the company

Western Electric

South Oklahoma City Junior College has done a lot of customized training over the years for Western Electric. Employees are upgraded in the trades through such courses as blueprint reading, welding, and machine technology. Police and security guard training also have been offered. The company believes that it is to its definite financial advantage to use the College's services. Western Electric not only contracts for courses to upgrade and retrain its employees during working hours, but also has a tuition refund program for job-related courses taken after work. The company encourages employers to take credit courses, if possible, because they are seen as motivational for the employees.

Clem Lepak, section chief of managed education and training at Western Electric, says that good communication between the company and the College is essential for success in joint undertakings. He believes that the College must be service minded and that both parties must be committed to making the training relationship work.

Small Business Programming

SOCJC was successful in obtaining a grant from the American Association of Community and Junior Colleges (AACJC) to provide special programming for small businesses. The grant objectives were completed early and were above expectations, and the College received the initial award given by AACJC for creative and innovative programming. The Senior Core of Retired Executives (SCORE), the Small Business Administration, and the South Oklahoma City Chamber of Commerce were involved in these activities. The College has been asked to continue the project for the coming fiscal year.

American Institute of Banking

SOCJC has worked closely with the Oklahoma City chapter of the American Institute of Banking (AIB) since 1973. In its Banking and Finance Program, the College provides special AIB courses for many area banks, offering the courses in the banks as well as on campus. A full-time coordinator employed by the College for the program. Approximately eight hundred students enroll per year. The banks are billed directly by the College for the fees of the enrolled students. In addition to these AIB courses, many related short courses and seminars are also provided.

OVERVIEW OF PROCESS FOR DELIVERY OF UPGRADING AND RETRAINING

Linkages

SOCJC has many bridges into the community, and all are credited with bringing businesses and industries to seek the help of the College in providing upgrading and retraining for their current or new workers.

Advisory committees are powerful sources for communicating the College's capabilities, as well as for notifying the College of companies' and organizations' needs for special training. SOCJC has thirty-four program advisory committees containing 307 members from 200 organizations. Also, faculty and staff members serve on thirty-six advisory committees of various community organizations, such as the Real Estate Commission and the Hospital Quality Assurance Committee for the Operating Room. In addition, faculty and staff are active in twenty-nine professional and trade associations, such as the Word Processing Managers Association and the National Tooling and Machine Association. Other bridges into the community are afforded by technical practicums at forty-nine clinical sites, as well as by work experience in printing plants, automobile shops, and other work settings. The large number of adjunct faculty, many of whom come from industry, provides another strong linkage.

The most focused linkage is that of the coordinator of continuing and occupational education (business and industry coordinator), who calls on industry on a daily basis to inform them of the College's customized training services and to coordinate programs with them. The new dean of career development and industry services will also have a strong public relations function in contacting company executives.

Program Design and Delivery

Needs Assessment for Upgrading and Retraining

Through SOCJC's competency-based approach to education, the business and industry coordinator and/or customized course instructors can help companies identify what it is that they specifically wish to achieve via special courses. Since the competency-based approach begins with the identification of outcomes, the College can state explicitly what employees will be able to do upon completion of training.

Course Development

The business and industry coordinator, customized course instructors, and company supervisors or personnel officers work closely together in developing customized courses and planning their delivery. Courses can usually be developed quite economically by adapting the competency modules and learning packets from regular courses given at the College. These modules are reorganized and tailored to meet the specific outcomes desired and equipment and processes used by a company.

Course Approval

Courses for industry are offered for either credit or noncredit, depending upon the wishes of the company. Specific credit is attached to each module or grouping of modules, so appropriate credit can easily be identified. However, if an off-campus course is offered for credit, approval must be obtained from the State Board of Regents to do so. The same restriction does not apply to noncredit courses. SOCJC can issue an emergency request to the State Board for approval of off-campus credit courses. This takes about thirty days. This alternative provides flexibility in spite of the restriction.

Funding

For customized courses, companies pay for the number of contact hours, any developmental costs, and extra costs for materials or equipment. The contact-hour cost is calculated in order to recover the instructional cost to the College.

Selection of Instructors

SOCJC likes to use its regular faculty for courses for industry if an appropriate faculty member is available at the time needed. With a choice of seven course entry points during the school year, and with the modular competency-based approach, faculty members can more easily be reassigned to industry courses. If a faculty member is not available or if special technical competencies are required, an instructor will be secured from industry—perhaps from the company requesting the course. The business and industry coordinator has a pool of persons from whom he can select an instructor qualified to teach the particular subject in the pertinent industry.

Companies approve the course instructors, and the instructors are then oriented to the organizations and work sites. Instructors work closely with the appropriate persons at the companies to make sure the content and methods meet their needs. The business and industry coordinator monitors the process.

The dean of instruction, Robert Todd, says that SOCJC tries to select faculty members and administrators who understand and and are committed to serving industry's training needs. Robert Allen, the manager of the Institute of Applied and Natural Sciences, states that his faculty members realize that this is a part of the mission of the College and is part of their jobs.

Scheduling, Facilities, Equipment, and Materials

The scheduling of classes, the location, and the equipment and materials used in customized courses are all designed to meet the specific needs of companies. The length and compactness of the courses and whether they are offered during working hours or after depend upon the needs of the industry. Employers usually want the classes to be conducted at their plant or office. This works well for the College, because its labs and classrooms are usually occupied by regular classes.

SUMMARY

Key Factors in Upgrading and Retraining

South Oklahoma City Junior College came into being ten years ago through the urging and supportive activity of the South Oklahoma City Chamber of Commerce. The College has had a close relationship with the business community ever since. At the time of this study, Oklahoma City has a healthy, oil-based economy, which is reflected in the area's low unemployment rate.

The programs and activities of the SOCJC are based on the College's philosophy of accessibility, flexibility, comprehensiveness, quality, and accountability. An outgrowth of this is its competency-based approach to education, with learning objectives and performance criteria set for each course. With learning materials organized into modules and learning packets, curricula are readily adaptable for use in special courses for industry.

SOCJC has a highly developed system for gathering input from the entire college community in its annual goal-setting process for the institution. Through this process, departments, administrators, and faculty members develop their own goals and objectives, on which evaluation of their performance is based. There is considerable benefit in having everyone know what the priorities are and what is to be achieved.

The College has purposely selected a decentralized approach to providing upgrading and retraining services to industry. The business and industry coordinator under the dean for community services is responsible for seeking out and responding to industry's speecial training needs, and for using College resources to organize, develop, and monitor the training services provided.

A Business and Industry Task Force in the College was formed to study and recommend ways to increase services to the business and industrial constituency. The Task Force recommended (1) making such activity a high-priority institutional goal, and greater identity and visibiltiy for the activity. It also recommended that the person with the responsibiltiy for planning, developing, and administering this center be given the proper authority to carry out the job. In a reorganization this summer, this latter recommendation was implemented by the creation of the new position of dean of career development and industrial relations. The new position places broader industry services responsibilities at the deanship level.

Overall Success of SOCJC s Approach

South Oklahoma City Junior College is a young but maturing college moving more fully into upgrading and retraining for industry. It is unfortunate that the resources and capabilities of the College are not utilized by the state as part of its effective economic development system for attracting new industry to Oklahoma by providing free start-up training, among other incentives. However, SOCJC is in a prime position to serve those industries once they are established.

The College's system of annual goal setting for the institution and all units and persons within it is a potent strategy for continued improvement, growth, and leadership in the community. With the new institutional goal of increasing services to industry, additional resources will likely be allocated to address this priority. The recommendation of the Business and Industry Task Force to establish a Business and Industry Development Center, if

implemented, should not only give identity and visibility to SOCJC's industry services, but also serve as a home base for expanded services.

There has been a problem of fragmentation of effort in providing industry services, due to the College's decentralized approach and the fact that there has been no one with sufficient authority to draw all its efforts together, but this should be helped by gaining a new administrator at the dean level who has broad institutional responsibilities for industry services. It is questionable, however, whether combining these responsibilities with those of career development will allow the dean sufficent time to deal with the major thrust of expanding involvement with and services to industry. Even so, with greater priority given to these tasks may come the resources to do the job.

SOCJC has been doing an outstanding job of responding to requests from local industry for special courses to meet their upgrading and retraining needs. In the first decade of the College, the decentralized approach has been quite appropriate, particularly as it has concentrated on serving students coming to campus. However, as SOCJC grows and matures, it has the opportunity to create units to expand services and focus on the special needs of its constituencies. At this point in time, creating a multiple-staff Business and Industry Development Center under an administrator with sufficient authority to draw upon the resources of the rest of the College may very well be what SOCJC needs to achieve its institutional goal. A favorite statement by Dale Gibson expresses the situation most appropriately: "Success is a process and not a destination."

CHAPTER 4

BARRIERS AND SOLUTIONS

During the five case study site visits, probing questions were asked regarding the kinds of barriers-and related solutions, if any—staff members at the five colleges encountered in their efforts to participate in economic development through upgrading and retraining of adult workers. More often than not, the enthusiasm of the college representatives for their programs was such that discussions veered away from direct discussion of barriers, focusing instead on the innovative policies and procedures by which the colleges managed to avoid or demolish such barriers. As a result, analysis of the case studies provided a plethora of "solutions" whose barriers could only be inferred from the discussions. The barriers thus derived seemed to cluster into the following categories:

A. State and local linkages for economic development
B. Course approval systems
C. College forecasting and planning
D. Marketing of customized training
E. Quick response customized training
F. Customized training management
G. Flexibility of resources
H. Internal organization and cooperation
I. Faculty and staffing
J. Other economic development outreach services

In the discussions that follow, specific barriers related to each of these categories will be examined, and practical solutions (where they exist) utilized by the different case study colleges will be reviewed.

A. STATE AND LOCAL LINKAGES FOR ECONOMIC DEVELOPMENT

BARRIER 1: It is difficult to convince state and local politicians and agencies to consider educational needs in a long-term, futurist perspective. By taking a long-term perspective, it should be possible to institute programs and create funding to meet evolving training needs and avoid a multitude of related problems. For example, shifts in demographics will vastly increase the demand for postsecondary adult education while decreasing the demand for secondary education throughout the remainder of the 1980s. More importantly, the increasing rate of technological change coupled with shifts in employment sectors in the 1980s are likely to require workers to seek more frequent upgrading and retraining. Unfortunately, few states are currently in sufficiently comfortable economic situations to worry about long-term problems, and persons in political power appear to shy away from long-term planning in favor of short-term solutions designed to ensure their reelection. Even were they differently inclined, there is a crippling absence of reliable labor projections—at both the national and local levels—upon which to base long-range program planning.

Solutions. At Triton College, the president has the ear of the locally elected board of trustees, who "have bought into" Triton's priority for economic development. At the state level, Triton's president, top administrative staff, and board of Trustees have developed excellent contacts and working relationships with Illinois representatives and senators, with the state agencies, and with the governor himself. An unusual plus for Triton is that members of this board of trustees, being elected politicians themselves, wield influence with state legislators and use that influence in support of Triton's economic development efforts.

At Tri-County in South Carolina, College administrative staff members have developed their own personal contacts and relationships with the state TEC System and the state's economic development agency. Although the TEC System appears to be more formally forwardlooking than most state education agencies (its "Design for the 80s" is a unique plan for meeting the state's technological training needs throughout this decade), Tri-County staff did suggest a number of strategies that could stimulate continuing long-term perspectives and planning. These include (1) establishing a computerized network across state postsecondary institutions to facilitate ready access to statistics on any area of the state, and (2) conducting more joint regional funding projects and seminars to educate local politicians about changing educational needs and the great potential that training represents for improving the local and state economies.

BARRIER 2: There often are problems in acquiring funding and other support from the state for college economic development efforts. Colleges frequently face problems of insufficient funds, facilities, and other support in reaching out to become effectively involved in delivering upgrading and retraining for adult workers. This is particularly difficult when such training is not given for college credit, because in the majority of state community college systems, colleges are not reimbursed by the state for noncredit courses and community service activities. This places an additional burden on already strained college resources.

Solutions. At the State Technical Institute at Memphis, College administrators take a very direct approach to this problem by making sure that all upgrading and retraining courses offered by the College, whether customized for industry or not, are credit-granting courses. This is because the state reimbursement policy is based on the number of credit hours generated. The College designs all courses for industry to meet both internal (and company) standards and all state requirements for credit. This has reportedly not interfered with the College's flexibility to customize courses for industry. (The approach is not necessary for customized courses for new and expanding industry, as such courses are wholly funded by Tennessee's Industry Training Service.)

In Michigan, where Macomb Community College is located, the state recently began to fund start-up training in the state through its community colleges. The effort is very new, however, and not well marketed. Even so, the Michigan Community College Presidents' Committee on Economic Development took the major responsibility for proposing and promoting the initiation of the state program. The skillful use of such formal organizations' influence is one avenue to awakening legislators to the potential of postsecondary training activities for economic development.

State funding for start-up training in Illinois (the High Impact Training program) is likewise very new and very modest in funding allocations. Triton College is making use of its influential Board of Trustees as well as the state's Community College Presidents organization to take aggressive leadership and create publicity to get the attention of state legislators and state agencies, in order to convince them that community colleges—with more generous funds from the state—can play vital roles in the state's economic development efforts.

BARRIER 3: State funding for customized training exists, but it is too often limited by strict eligibility restrictions, thereby reducing its effectiveness. One example of these restrictions is that there is funding for customized training in Michigan, but it is available only for new or expanding industries, and a company must promise to hire the graduates of the training program. Likewise, in South Carolina the state will provide training funds only for companies that are creating *new* jobs. This makes it difficult for colleges to provide customized training for workers who are already employed by a company, even though without such training, the company's productivity and competitiveness will be hampered and its solvency perhaps even threatened. For companies considering moving out of an economically depressed state to a different location, an important factor in the decision may be the first state's unwillingness to absorb some of the expense of upgrading the current employees.

Solutions. As cited in the preceding barrier/solution, there are at least several avenues for colleges to acquire state funding for customized courses, if they are willing to assume leadership in influencing state economic development activities, or are willing to look for ways to ensure reimbursement by the state for customized courses offering credit. Where such avenues are not available or effective—as in the case for Triton College and for South Oklahoma City Junior College—the colleges may assume responsibility themselves for trying to provide inexpensive customized training to industry. Such courses may be offered at cost or at near-cost by the colleges, or funds may be sought from other, local sources, such as a county or city council.

BARRIER 4: There is the will for cooperation between state agencies and colleges in economic development efforts, but poor or muddled communications hamper those efforts. Confusion often arises when there is either a lack of clear responsibility or a duplication of responsibility for making or maintaining communications, either in the college or in the agency (and occasionally in both). The result is that vital information does not always reach the proper person directly or in time for effective cooperation.

Solutions. A number of the colleges designate a single person as the contact for communications about economic development efforts, both for the college and for the agency. While colleges have no control over such designations for state agencies, within the college itself the designated contact most often is the president. By dealing on a one-to-one basis with the agency commissioner or board director, rapport is built, confusion and red tape are avoided, and the college is able to move faster, when necessary, on customized training agreements. College presidents or other senior administrators can also serve actively in any local development agencies, in order to cultivate crucial contacts and establish useful communication networks across political levels.

BARRIER 5: Poor or insufficient communications and articulation among state and local educational institutions often hamper their efforts to improve their economic development outreach.

Solutions. The State Technical Institute at Memphis shares its courses, curriculum materials, and expertise with area vocational-technical schools in the state so they may better serve industry throughout the state. The Institute has also contracted with eight area vocational-technical schools to bring them under the administration of the Institute in order to further their outreach to industry and to ensure efficient and accurate articulation of technical training.

Tri-County Community College, as part of South Carolina's TEC System, will soon have access to model curricula (as well as a mobile equipment pool) in the six designated high-technology training areas served by TEC's Innovative Technical Resource Centers.

BARRIER 6: Formal contracts mandated for some states' customized training programs for industry may require many signatures of various college and state officials. This requirement for higher approval may be costly in terms of being able to move quickly to meet industry's training needs. For example, in Tennessee, contracts with companies for Industry Training Service (ITS) start-up training require up to ten signatures, including the company representative, the college or school president, the head of ITS, the assistant commissioner, the commissioner of education, the commissioner of community and economic development, the commissioner of finance and administration, the state attorney general, and the state governor. Schools in that state may not legally start to deliver customized training programs until all signatures have been obtained, which can take up to six months. This delays training response, and may be costly (in terms of productivity) to the recipient companies.

Solutions. In some states, contracts are either not required, or they require the signatures of only the college president and the company representative. In Tennessee, the State Technical Institute at Memphis has, on occasion, felt it necessary to begin training before all the numerous signatures were obtained on the contract. In that state, new legislation will be necessary to delete the contractual red tape. This is a barrier that may be best avoided in other states from the time of initial state legislation to fund customized training. Legislators must be educated about the costs of bureaucratization so that the legislation allows any contracts deemed necessary to be signed only by the company representative and the college president.

B. COURSE APPROVAL SYSTEMS

BARRIER 7: Credit courses, whether customized or not, require time-consuming course approval by the state board of regents or other state education agency. In some states, new course and/or program approval is conducted at the state level only once a year; in other states, new courses are reviewed twice a year, but seldom more often than that. This is a problem for colleges trying to respond in a timely way to changing technologies, shifting labor demand, and companies' often immediate need for customized training in which college credit is requested or is necessary for certification to meet government regulations.

Solutions. The Oklahoma State Board of Regents for Higher Education reserves for itself the right of approval for not only every new program, but every new course. South Oklahoma City Junior College (SOCJC) maintains some flexibility by creating course categories with a Special Topics subcategory that has a generic course description. This description is written so it can be used for almost any new kind of course, within the general course area. The Special Topics courses are also written to have variable credit (0-4 credit hours). The newly developed course description is then transmitted to the State Regents as a Special Topics course within the approved course category. Such Special Topics courses require only internal college approval. The state Regents recognize the necessity of such a generic course generation system, and informally allow much flexibility. The State Board of Regents also has a procedure for thirty-day emergency course submission and approval.

The State Technical Institute at Memphis has a similar arrangement with the Tennessee State Board of Regents for customized credit courses. The College is not required to submit a revised course description for approval unless that course has had its content changed by more than 10 percent, overall. When more than 10 percent of an existing, approved course must be changed to meet customization requirements, the College makes use of a Special Course designation that has a previously approved generic description.

BARRIER 8: When seeking course or program approval, the State Board of Regents requires that employer demand be shown, even though the course may address training needs that are only emerging. This can be a particular problem in a region where a new technological application is just becoming available (e.g., CAD/CAM) or is just starting to catch on (e.g., word processing). New machines and processes are not usually adopted at the same rate everywhere in the nation, and sometimes there simply are no recorded data on employer demand, or the data available are not current and reflect (inaccurately) a very low demand. Colleges concerned with providing training on the "cutting edge" of new technologies frequently encounter this situation.

Solutions. At Triton, the College's Office of Research conducts employer surveys to determine demand levels, with a short turnaround time on the research. This is highly useful to the College not only for course or program approval, but for gauging job demand for graduates of its accelerated Job Training Institute courses (as well as for adding, dropping, or modifying them). Triton also finds it very useful to survey all possible applications for new technology areas to determine the true job demand level. For example, for laser/optics, Triton researchers found very low demand for the obvious manufacturing applications, but the demand for laser technicians rose significantly when they surveyed laser applications in optical-, medical-, and research-related jobs.

Colleges also make effective use of advisory committee members to collect data on employer demand. Advisory committee members, especially those employed by or owning local companies, have numerous contacts through their professions and can ask other employers more readily for sensitive data than can College representatives.

C. COLLEGE FORECASTING AND PLANNING

BARRIER 9: There are problems finding enough reliable information on changing job demand, high-technology trends, changing occupations, changing regional economic patterns, shifting demographics, and so forth in order to make intelligent decisions about both short- and long-range institutional needs and economic development programs. Colleges must continually be "sensing" the environment in which they exist in order to judge their priorities and seek opportunities to create and/or upgrade programs and policies to keep pace with both current and future student training needs and with the labor needs of industry. But mechanisms or strategies to collect and analyze such information may not always tap into the best and most accurate sources, or the strategies themselves may be ineffective—which can cripple a college's successful outreach.

Solutions. At Triton College, long-term strategic planning is emphasized, and depends on an information gathering and sorting strategy called "environmental scanning," as well as on formal surveys conducted by the College's Office of Research. Environmental scanning is considered the responsibility of every staff member, although top administrative staff members have the primary responsibility to "keep their ears to the ground" for reliable, useful information and data. Environmental scanning is conducted informally, with all Triton staff encouraged to keep track of what is going on in their own specialty areas in whatever manner is effective and fits their own work styles. Information is fed back to the administration to guide priorities and decisions. The state of Illinois also conducts surveys every five years, and Triton staff members make use of that data, but also conduct their own annual graduate surveys and other more frequent surveys of the community in order to have the most up-to-date information. In some cases, Triton makes excellent use of professional surveys, such as the Gallup poll, but most often Triton's surveys are conducted by its own staff via telephone.

Macomb Community College also has access to some statewide data, but has not always found them applicable. Macomb supplements state data with its own evalutions and surveys. A special department, the Center of Community Studies, is being set up to help gather data for planning and development. The Center uses primarily telephone surveys, and plans are to have a special room designed with plug-in phones and staffed with ten to twelve trained persons to make and take calls.

BARRIER 10: Changing technologies continually render current programs obsolete. Programs and courses in high-technology areas may require annual (or even more frequent) upgrading in regard to course content, instructional materials, and especially equipment. In order to produce the best, most current training (with which graduates will be able to become productive immediately in new or upgraded jobs), departments and divisions within colleges must track significant changes in a wide variety of technological breakthroughs and applications—a difficult task in many fields (e.g., in microcomputer developments, articles or evaluations of new hardware or software may become obsolete in even the few months between the time the article is accepted by a periodical and the time it is actually published). In addition to upgrading current programs, colleges must also have reliable information on emerging technologies and applications in order to plan programs and facilities for new occupations, or for occupations whose labor demand is likely to increase or decrease significantly.

Solutions. At South Oklahoma City Junior College, the College administration recently added six months of "futuring" activities to its regular duties, in order to collect information on changing technologies and application trends and to forecast how the College's own priorities would be required to change to meet the emerging training needs. This futuring activity included considering the information in *Three Thousand Futures: The Next Twenty Years for Higher Education* (Carnegie Council 1980). As a result, the College has created four in-house task forces to conduct intensive brainstorming sessions with mid- and upper-level management staff and with related faculty in the College in specific content areas. These groups have collaborated to develop departmental and institutional goals for their training areas, with schedules for development of programs and acquisition of facilities and/or equipment over the next ten years.

At Triton College, technological forecasting depends in part upon the staff's environmental scanning approach, and in part upon advice and insights from the various programs' advisory committees. These committees deliberately involve experts from the technologies related to the programs—including researchers and users of the technologies, persons who are active in the industries. Information from advisory committees is also a primary source of technological forecasting for the State Technical Institute at Memphis and for Tri-County Community College. Tri-County also has access to information and forecasts from the TEC System's six Innovative Technical Resource Centers around the state, whose express mission is to keep the TEC System colleges on the cutting edge of technical training in the six designated technological areas.

BARRIER 11: Poor communications between business and industry and the two-year colleges keep them from becoming informed about each other's needs and services. The need for two-way communication is vital to any college's successful economic development outreach.

Solutions. Much of a college's communications relate to the way it markets its training services, and to its methods for gleaning important environmental information for forecasting and planning. All of the colleges in the site visits give strong emphasis to finding more (and more expert) industry people for their advisory committees, because these persons are key agents in linking the private sector with the colleges. At Tri-County, top College administrators work to

convince county planning commissions to include more expert business and industry representatives on the commissions and other related agencies or councils. Tri-County also conducts plant-site visits with most companies for which it delivers customized training, one purpose being to establish good communications with that company and its industry. Tri-County faculty members are encouraged to become involved in plant functions and to spend summers seeking on-site work experiences with companies in their specialty. Tri-County also has a TEC industry services representative who spends the majority of his time in the field making personal calls on companies to market the College's customized training services and to establish two-way communications between the companies and the College for any other purposes that may arise.

Triton College has perhaps the most unique—and probably one of the most effective—strategies for establishing two-way communications with the private sector through its special relationships with professional societies and trade associations, and through the long-term training contracts it has established with corporations. Bringing the trade associations' headquarters right onto the Triton campus has been especially effective, as it encourages experts in various fields to become involved in College training activities as students, instructors (or lecturers), or as advisory committee members. Triton also puts time and effort into maintaining its contacts with a variety of professional and technical networks around the country. These contacts serve a variety of two-way functions, but are especially useful to Triton in locating experts to instruct highly specialized customized courses or seminars.

BARRIER 12: Job openings may not always be available for graduates of training programs, especially of programs designed to retrain adults for new occupations. Retraining alone may not solve unemployment problems; the result may simply be a graduated class of retrained, unemployed people. Colleges must do everything possible to make sure that levels of labor demand ensure jobs for such graduates, regardless of levels of student demand.

Solutions. Customized training for start-up in Michigan (Macomb Community College) is funded by the state only if the company requesting the training guarantees to hire all qualified graduates. In South Carolina, start-up training funded by the state does not have this stipulation, but the majority of training graduates have always been hired by the requesting companies, and turnover rates for hired program graduates after one year in the company have been consistently low (often around 1 percent).

Triton College makes good use of its environmental scanning and its annual graduate surveys to keep the College informed of local job market changes. The annual survey of graduates probes how many graduates are employed in the areas of their training, and how well their training matches up with what their jobs entail. This information is used for yearly decisions on whether to add, delete, or modify courses and programs. In addition, Triton's Job Training Institute (JTI), which delivers accelerated training to adults for entry-level employment in high demand job markets, has its own placement specialists, who contact business and industry and "develop" jobs for JTI graduates. The goal is to have at least one promising interview lined up for trainees upon completion of their JTI training.

D. MARKETING OF CUSTOMIZED TRAINING

BARRIER 13: Colleges do not always make the right contacts or adequately communicate their commitment to economic development and their customized training services for industry.

Marketing is a vital part of becoming involved with economic development in a college's service area and is a sensitive function that requires skill, diplomacy, commitment, and intelligent insight into the needs and desires of industry. This is particularly a challenge when convincing top company management of the benefits of customized programs to upgrade or retrain the company's employees, because companies may not see the advantages of training through community colleges, or may think there is a "catch" involving payment or governance.

Solutions. There are a variety of approaches to marketing a college's economic development services, but at virtually every college studied, top administrative staff members at the college as well as faculty in general are considered "salespersons" for customized training. At Tri-County, Triton College, and South Oklahoma City Junior College, the top administrative staff conducts intensive personal marketing that involves meeting with industry representatives who approach the college for training services. Several of the colleges studied have specific persons or departments responsible for making direct industry contacts with the express purpose of informing those companies of the college's customized training services and then selling them.

Several colleges make effective use of other marketing strategies in addition to personal selling. Triton College probably has the strongest and most diverse marketing strategies of the colleges studied. Triton uses catchy slogans ("Are you running a school or are you running a business?" and "Triton for Training") in its direct mail marketing of training to companies, as well as in marketing its courses to the community at large (daybreak courses have been advertised as the "Breakfast of Champions"). Triton puts considerable emphasis on following up every "nibble" from its direct mail campaign with intensive telemarketing follow-ups (i.e., telephone contacts intended to set up appointments with company representatives in order to sell customized training services). Triton also uses journals, popular periodicals and newspapers, professional and trade networks, and radio ads. The college has a marketing office devoted to pursuing its aggressive marketing policy, with expert graphics and advertising staff to prepare its enticing booklets, brochures, posters, letters for mail campaigns, and copy for ads.

Every college involved in actively marketing its customized training services has emphasized the need for staff members who speak industry's language—that is, these staff members must understand a business's priorities, listen well, talk "turkey," try not to preguess or tell a company what its needs are, and avoid educational jargon. A number of colleges are fortunate to have their key marketing staff be persons who have owned or worked with industry, which lends not only greater savvy to college-company contacts, but also greater credibility.

BARRIER 14: Colleges may not have the resources or may not have made it a priority to do extensive marketing of customized training services, though they may wish they could do more. Some colleges simply cannot afford a marketing department, or do not have state funds to support a person primarily responsible for marketing customized training (as does Tri-County through the TEC System). At other colleges, the notion of economic development outreach through customized training is only beginning to catch on, or is not a priority (i.e., may not be included in the college's mission statement), or may not receive much support from the state.

Solutions. South Oklahoma City Junior College (SOCJC) has an interesting tradition in regard to marketing customized training that appears to work well, despite its somewhat reduced emphasis on direct and aggressive marketing, as compared to some other colleges. SOCJC does give some responsibility for direct marketing to the dean of community services, the dean of career development and industrial relations, and the business-industry coordinator, but much of this responsibility is shared with the rest of the College faculty through SOCJC's "decentralized" marketing approach. In this system, faculty members have primary responsibility for looking for

opportunities to expand economic development participation and training in their own specialties. While this approach has created a "fragmentation" of effort in the past, the new structure—with the expanded responsibilities of the dean of career development and industrial relations—should remedy the problem. The dean will coordinate all the faculty efforts and follow through on institutional objectives. Faculty members are nonetheless considered the best program marketers, because they have the expertise and are best equipped to talk to industry about the training opportunities they can provide.

Macomb Community College does not have the resources to do an extensive amount of customized training, nor has it made this one of its priorities. Michigan's Department of Labor provides some funds for free start-up training for industry, but the state does not aggressively advertise this service, nor is there a team approach among the state community colleges to promote the training. As a result, Macomb staff have been reluctant to take a leadership role—they have all they can handle in trying to stretch their budget to meet other college obligations, of which economic development is only a part. Macomb staff members have recently been organized, however, to create a center for community studies and services, which does some planning and outreach to inform the community of the College's services, and to gauge what the community and industry want from the College. Most outreach has been through contacts with local chambers of commerce (highly active in economic development), and with work-education councils in the county. The College has joined with the Michigan Community College Presidents' committee to pressure the state to step up its support of customized training and of the marketing for programs that do exist.

BARRIER 15: Colleges may run into problems convincing companies of their commitment and credibility in delivering customized training. Not only do many company representatives think there is a "catch" to customized training from a community college, they sometimes also doubt that the training will be of sufficient quality, or that the college will follow through on all its promises.

Solutions. Administrators at all the colleges studied emphasized that the person responsible for making direct contact with a company to market customized training has to (1) convince the company that the college's customized training program will be conducted by qualified instructors and (2) that the program will meet all of the company's specified needs (as well as any certification standards, where they pertain). One of the most important marketing aids is the college's track record, which should show its long-term commitment to industry training needs, customized and/or noncustomized. The college should also cultivate a reputation for always making good on its promises. For this reason, the president of Triton College has laid down the College policy regarding all customized training, whereby even if College representatives miscalculate what the College can deliver, the College always backs its commitments and invests whatever resources are necessary to make the training program work.

Colleges that have been involved successfully in delivering customized training generally keep track of the effects of the training on the productivity and employer turnover of the companies. South Carolina (Tri-County) claims that its "Start-up in the Black" training allows new companies to operate at almost immediate high productivity rates because trainees receive instruction on equipment and processes that are virtually identical to the set-up at the new plant. While this claim might be argued, there does seem to be a reduction in the amount of time that plants starting up in that state take to become productive, compared with start-up in other states without such training. In addition, Tri-County keeps track of the rate of turnover for trainees from its customized training programs, and in many cases (especially for start-up training, where the

College is involved in recruiting and selecting the trainees) the rate of turnover is as low as 1 percent during the first year of employment. This compares with turnover rates as high as 150 percent in a year for new employees recruited by the company and not given customized training. Even in the less stable economy of Michigan, turnover rates of graduates from Macomb's customized training programs are 20 percent in a year, compared to local companies' more usual 85 percent.

Several colleges take representatives of prospective companies to meet representatives of companies for which the college has delivered customized training. The local companies frequently are quite eager to give their recommendations to the visitors, and satisfied "customers" lend enormous credibility to a college's sales pitch.

At all of the colleges studied, the most important agent for communicating and supporting a college's credibility is the college president, who must be the ultimate leader and contact for the college's customized training services. At several of the colleges, the interest, knowledge, and commitment of the president to the college's economic development outreach and track record have been extraordinary, and the colleges' track records have been impressive. Presidents who have the support of their boards of trustees and state agencies in marketing customized training and in insisting on maintaining the college's training credibility tend to be the most effective, but even without such external support, the college presidents are probably the most important marketers for any economic development outreach.

BARRIER 16: Some colleges have trouble convincing or assuring a company that upgrading its employees through customized training will not result in those employees' taking their new skills and leaving the company for more lucrative employment elsewhere. This side effect of upgrading programs is real, and some employees frequently take this path. Rival companies have also been known to "pirate" such newly trained workers away from the original firm by offering the upgraded workers better wages or other benefits.

Solutions. Although no such instance was uncovered in the five case studies, some companies and/or colleges apparently require trainees in customized courses to sign documents stating that they will stay with their original employer for a stipulated length of time following completion of the courses. At the request of a given firm, some colleges make sure that courses for industry make use only of that company's specific materials and customized machines and that training is highly specialized to the particular company's operations. Changing jobs involves a basic individual freedom in this country; however, it is questionable just how much any college or company can or should try to block workers from exercising this right.

BARRIER 17: Some companies do not want customized training because they do not want outsiders involved in their business. This fact has a is particular meaning for colleges delivering state-funded customized training, because some companies claim they don't want a governmental agency telling them what to do.

Solutions. No solution was encountered for this problem at any of the five case study sites. Macomb administrative staff members admit that it is virtually impossible to design customized training without being given enough information about a company to "know what's going on with it." Therefore, they do not pursue customized training agreements with such firms.

E. QUICK RESPONSE CUSTOMIZED TRAINING

BARRIER 18: It is often difficult to develop effective customized training courses on short notice. When companies come to a community college for customized training, they often need the trained workers "yesterday." Opportunities for meeting these kinds of economic development needs are often unpredictable. Colleges frequently must scramble to design and develop curricula and instructional materials, find facilities and equipment, and acquire or orient qualified instructors.

In unionized companies, it can be difficult to get a consensus among company, union, and college regarding delivery of customized training and what the training should consist of. Another related problem is that faced by Macomb College, whose area companies often handle customized training as a bidding situation—that is, companies frequently call two or three other colleges, and the College then must (1) decide almost immediately whether it can and will deliver the training, (2) say how much it will cost, (3) make a commitment on a fast start-up date, and (4) designate a qualified instructor. If the College does not respond with a "bid" that same afternoon or the next morning, the training contract almost certainly is lost to another institution.

Solutions. Several colleges emphasize the importance of having all staff and faculty be well informed about their college's economic development priorities and why economic development is so vital to the community. This—and a good deal of general preparedness on the part of those staff charged with negotiating and developing the customized training—infuses college staff and faculty with a sense of commitment to economic development efforts, and provides motivation and confidence in meeting unpredicted training opportunities.

The difficulty of finding qualified instructors is cited as one of the worst barriers to quick response. Strategies for locating such instructors include using full-time faculty where practical, using members of adjunct (part-time) faculty, using outside consultants, and using experienced employees from the very company requesting the customized training. (These will be discussed later in the barriers under "Faculty and Staffing.")

Macomb College, because of the very limited funds committed to providing customized training, sometimes functions as a broker rather than a provider of training, by steering a firm requesting customized training to the services of other area trainers who own their own training consultation firms and work independently. Even here, the companies usually want the College to remain a participant to some degree, asking College staff to look over the independent trainer's syllabus, to cosponsor the training arrangement, and in general, to provide input that adds credibility to the training.

Regarding designing curricula and providing instructional materials, many colleges base customized courses on training modules that are already in use at the college in regular occupational training programs. At South Oklahoma City Junior College, staff members who put together customized courses phone publishers to try to locate any materials that may relate to the course (or any future courses the College is likely to customize). The College staff members also try to keep materials on hand that appear to have utility for any potential customized courses. Many regular college courses are deliberately designed to be modular and flexible in content so they can be reorganized and adapted readily for customized training needs.

At Memphis, all courses--including customized training-must be for credit, and College staff members are careful to make only minimum adjustments to existing, approved courses, whenever possible. To remain eligible for credit (and thereby for state reimbursement), course

content must retain 90 percent of the approved curriculum. If the customized course requires more adjustment, the College compensates an instructor to revise the curriculum or design a new one. Such curricula (with more than 10 percent revision) are designated "Special Courses," and are covered for state approval under a generic Special Course description. This speeds up the design, approval, and delivery of customized training enormously. (Course approval can take up to a year in some states, so most colleges do not offer customized training for credit unless a company specifically requests it. In those cases, most colleges make use of special emergency procedures to obtain state approval, though delays are still a problem.)

Both SOCJC and Tri-County use a competency-based approach in all instruction, and this enables very clear and concise definition in agreements about course content and objectives when determining training needs. Tri-County also is currently putting all fundamental course modules on a word processor so staff can store, reorganize, modify, and print out customized courses as they are needed.

BARRIER 19: Many colleges have problems finding funds to provide quick response in developing and implementing customized training as the need arises.

Solutions. In states where free start-up training is provided, there are usually set-aside monies for the purpose of developing or modifying courses. In South Carolina, facilities are created or adapted to meet special training needs through funds appropriated from local taxes by the county planning commissions, but the state TEC System pays all other developmental costs. The local and state economies are not unduly stressed by these costs, since most such training pays for itself in additional income and revenues created by the new jobs, often within a year or two.

At both SOCJC and Memphis, there is considerable budget flexibility, so that customized program development needs can be met. At Memphis, a certain amount of money is budgeted annually for its Business, Industry, Government Division to operate customized programs, and this money pays the salaries of the staff that develops the courses. On occasions when this annual allotment runs dry, the College president always finds funds to continue the division's work. At all of the colleges, the staff does whatever is necessary to get a program up and running—secure modules, hire consultants to develop a program, or find some other method to enable quick response, and to fund course development.

F. CUSTOMIZED TRAINING MANAGEMENT

BARRIER 20: There is a danger of a college overpromising on what it can actually deliver regarding customized training. It is all too easy to get carried away by enthusiasm. The result can be that a college tries so hard to be responsive that its offers exceed its ability to deliver.

Solutions. Having an administrative staff member or a department charged with coordinating and controlling the college's economic development outreach and marketing can diminish the likelihood that overpromising will occur. Colleges such as Triton, where marketing is a major thrust, have found that they must continually caution themselves not to let their reach exceed their grasp. The message is not, "Don't do it"; rather, it is remembering that resources are not limited. The philosophy at Triton has been, "We take risks, but we don't fail—even if we lose additional resources." That is, if a commitment costs the College more in personnel or equipment than was budgeted, the College tries to make good on its promise anyway, because

College administrators believe that the College's reputation and credibility are worth more than some lost monies. Once a college fails to deliver on its promises, it will take much more time and many more resources to convince industry that the college will "do it right" the next time.

BARRIER 21: Companies may collaborate with a college on setting up customized training for their employees, and then have to back out of the arrangement. This may occur after both the company and the college have invested time and money into designing and developing the entire training course, including curricula and instructional materials. The reasons usually are an economic turndown or other unexpected factor.

Solutions. There is no simple solution to this problem; colleges must be prepared to take this risk. However, economic development staffs at several colleges recommend that college management be careful about how much consulting the college gives away, gratis, in the planning phase of the activity, and how many staff members become involved whose time (and salaries) will be a loss to the college if a company must back out of a customized training agreement after resources have been committed. It may also be a good idea in some cases to have at least a simple contract with the company, and to write into that contract that the company will reimburse the college for developing the instructional materials and syllabus and consulting regarding the activity. (This does not apply, of course, to start-up training funded by the state.)

BARRIER 22: It can be difficult for college course developers to make sure that customized courses teach the skills that trainees need and companies want. In other words, colleges must be careful to communicate clearly with companies when designing the syllabus and content of a customized course, so that graduates of the training have the skills to do the work the company has lined up for them. Failure to match training with skill requirements can damage the credibility of a college's customized training services.

A related problem is making sure that courses teach the skills that actually relate to the company's problems. Too often, companies think they know their training needs, only to discover later that they were on the wrong track.

Solutions. At Tri-County, the College provides free needs assessments, and qualified College staff will frequently make site visits to company plants to work with company representatives on designing course outlines and writing competency statements to guide instruction. The course syllabus and instructional materials are closely reviewed by the College and the company, together, prior to implementation of training. The use of competency statements and the competency-based approach to instruction simplifies communications and course development efforts.

SOCJC has companies that request customized training do their own in-house training needs evaluations, and then the College collaborates with the company to produce clear-cut competency statements to guide course design, much as Tri-County uses. To keep the course in line with the competency objectives, course instructors conduct interim evaluations using student feedback and revise the course as needed. This kind of formative evaluation is conducted during customized training delivered by most of the colleges studied and has proven invaluable in making sure that trainees are indeed learning the skills they are being taught, and that these are the skills stipulated by the agreement between the college and the company. Colleges may also encourage a company to conduct its own interim evaluation, so that the

company can ascertain whether the skills being learned are the skills it truly needs. Should any inconsistencies be revealed, the company and college can collaborate on course modifications, as needed.

BARRIER 23: College course designers may run into problems with persons taking customized or other special training who do not have sufficient basic skills to learn the more advanced skills being taught. Some colleges offer special training courses (noncustomized) on an open-door basis—that is, requiring no prerequisites (e.g., Triton's Job Training Institute)—but find that applicants frequently do not have even the basic skills needed. This problem is also encountered in customized training, where skill deterioration due to disuse creates basic skills deficiencies in some prospective trainees.

Solutions. At Macomb, Triton, and Tri-County, applicants for special training courses are all pretested in basic skills, which may include basic reading, math, English comprehension and verbal ability, mechanical aptitude, and so forth. For Macomb's robotics training program, applicants go through a two-week pretesting period that measures mechanical aptitude, space relations, abstract relations, math and English, and mechanical space relations skills.

To compensate for trainees' basic skills deficiencies, most of the colleges have begun to include math and reading review modules in their customized training courses, to serve as "brushups" for students whose skills have deteriorated through disuse. At SOCJC, students whose skills are insufficient to enter special training courses are offered remedial, open-ended courses, such as math review, where students' individual needs and levels are identified and materials are provided to bridge the gap between basic skills deficiencies and the skills to be covered in the special training course. Students review the individualized materials and are usually able to enter the special training course within eight weeks or less.

At Triton, persons whose basic skills are not adequate for Job Training Institute (JTI) programs are counseled to get tutoring, including tutoring in English as a second language at the College's Learning Assistance Lab. If such prospective trainees insist on taking a JTI course without the remedial tutoring, they are required to sign a disclaimer absolving the College from responsibility if they fail the course.

BARRIER 24: Adult students demand more in terms of training content and instructional methodology than do traditional community college students coming directly from high school. Some colleges frequently find themselves at a loss when adult students lose interest in classes run according to the traditional lecture mode. Adults also demand more individualization of instruction. Holding the interest of adult learners is vital to successful training, whether in customized courses or other occupational training.

Solutions. At Tri-County, instructors are required to conduct interim student evaluations regarding the effectiveness and interest level of the material and instructional modes and to modify those as needed. Instruction is delivered in a wide variety of modes—videotapes, role-playing, hands-on experiences that relate academic instruction to the job, slide-tape presentations, paper-and-pencil activities, group discussions, and so forth. These modes are intermixed to maintain a high level of student interest. Students also have access to videotapes of the operations they are trying to learn so they may review the operations and assimilate the material more or less at their own rate.

Triton's courses have built-in adult education techniques that vary the instructional modes to maintain student interest. Some courses are on videotape and course content may be studied at the students' own pace during a semester. Some courses and labs are open-entry/open-exit so students may use the equipment at their own convenience during certain hours or on certain days.

At SOCJC, all of the courses are competency based and individualized to focus on students' individual needs in developing specified competencies. The College's philosophy is to strive to serve individuals first, because individuals are the basic unit upon which industry's labor needs must ultimately depend.

Most of the colleges studied provide some form of training in the instruction of adult learners for their adjunct faculty who deliver most adult training.

BARRIER 25: Too often, persons in retraining programs for the unemployed come to the termination of their unemployment benefits or other resources, and must drop out of the training before completion. When this happens, the purpose of such training programs is instantly negated; the trainees are unable to use the training to get the targeted jobs, and the college loses the time and funds it has invested in those trainees.

Solutions. This is a most serious problem in states such as Michigan, where high rates of unemployment make such retraining opportunities a vital hope, but where unemployed workers and their families increasingly find themselves at the end of their financial tethers. The retraining program in robotics offered by Macomb College in cooperation with the Downriver Community Conference has run into this problem frequently. The Downriver Community Conference has tried to help keep such trainees in the program by providing a small stipend (at minimum wage) for the time trainees spend in class. If such trainees are on government assistance (their unemployment compensation having run out), the Downriver Community Conference also gives them a stipend of thirty to forty dollars a week, plus ten dollars toward gas for travel. This small incentive apparently can make the difference to some trainees between having to drop out of the training or being able to complete it and go on to find employment in robotics.

BARRIER 26: Colleges may find it difficult to stretch limited resources to meet the challenge and additional costs of providing customized training. This is a problem at every college, whether there is state support for customized training or not.

Solutions. The presidents at the five colleges studied are particularly active in seeking ways to stretch their colleges' limited resources, making "the most of what we have." Some presidents become entrepreneurial to a great degree, getting funding from as many sources as they can find. They look for equipment donations and facilities. They try to set up special training relationships with industry and trade associations, as well as with professional associations. They campaign for gifts of scholarships. For customized training efforts that are not funded by the state, they become involved in determining how those courses can be offered in the most cost-effective manner both for the college and the company. Often this results in customized courses requiring a certain minimum of students in order to maintain at least a break-even status on expenditures. Some colleges (such as Macomb) cannot always stretch resources to meet all customized training requests, but do serve industry at least in the capacity of brokers to help them locate expert trainers to deliver the needed training.

G. FLEXIBILITY OF RESOURCES

BARRIER 27: Competition is keen for limited space on campus to conduct both special training (including customized training) and regular college programs. Not infrequently, students or companies may require the use of training facilities that are also used heavily by other college programs. For example, there is conflict at Triton over access to the word processing lab because of great demand. Most seminars in Triton's growing Allied Health area compete with traditional classroom courses for space. Newly built facilities on the campus fill up as fast as they come into operation, and there is often still significant overflow.

Solutions. Where practical, most of the colleges deliver customized training courses at off-campus sites, most frequently at the company's site. Triton also uses hotel or other facilities when necessary. For Tri-County's Special Schools training, it is the responsibility of the local county councils, together with the TEC System area commission, to set up and pay for facilities off-campus, if necessary.

Some colleges designated certain areas of buildings as special training centers, but overflow and competition for some facilities and equipment remain a perennial nuisance. SOCJC has open landscaping in all its facilities, and dividers can be moved around to give considerable flexibility to classrooms and offices, but this is not always sufficient to meet all training needs. Triton College puts its Office of Research to work scheduling usage of space for competing programs in order to determine the best ways—and times—to share facilities during peak periods. Triton also uses new buildings and training facilities built on campus through unique cooperative relationships with trade associations. Collaborative scheduling allows the associations and the College to share training facilities both for the associations' special training and regular College programs.

Creative scheduling is another important solution to conflicts for space and equipment. Triton has at least partially resolved the problem of demand for its word processing lab by scheduling special training programs' use of the facilities at unusual times, when regular classes are not using them. Memphis also uses creative scheduling to resolve conflict over the use of its computer facilities by running some of its customized computer training courses out of sync with the school quarter, when regular demand is greatly reduced. Macomb runs Saturday classes, midnight or early morning classes, classes on holidays, and classes between semesters in order to give trainees in special programs access to equipment that otherwise is in heavy use. Triton uses the same strategy to considerable advantage.

BARRIER 28: Working adults and companies needing customized training are often unable to use traditional schedules. Many working adults have work schedules or home responsibilities that prevent them from taking courses during normal day or evening times. Companies may also need training for employees to begin and end at times that do not coincide with the college's semester, trimester, or quarter.

Solutions. Triton and several of the other colleges make extensive efforts to meet the training needs of adult workers by offering courses at unusual times to fit unusual needs. For example, Triton has a Midnight College program offering a variety of training classes that run throughout the night. These courses are especially convenient for persons working a second shift. Triton's "Breakfast of Champions" is a menu of courses available in the very early morning (6 a.m. and later) for adults wishing to take a class before going to work. Weekend College courses at Triton enable working adults to bring their children into the classroom, where subjects are taught so

that both parents and children may engage in interesting learning opportunities. Also at Triton, open-entry/open-exit courses allow adults to view videotaped course modules and/or to make use of lab facilities on a flexible schedule of their own choosing.

At SOCJC, the academic calendar overlaps, with essentially seven different official entry points throughout the year (every eight weeks) when students can begin courses. Every course taught at Memphis is videotaped so that if working adults are forced to miss a class, they can go to the Learning Resources Center and review the tape.

To meet industry's training needs, most of the colleges will begin a customized course at any time of the year, because when companies need training, they very often need it immediately (or nearly so), not when it is convenient for the college to start up a new class. SOCJC's frequent course-entry schedule gives greater flexibility for customized courses that are run on campus, though the College will begin a new course at any time if the need is great. Triton is able to customize a seminar or short course on fairly short notice, and uses flexible scheduling to enable sharing of facilities on campus for courses that cannot begin off campus. Memphis' Business, Industry, Government Division frequently operates its customized training courses out of sync with the rest of the College, and while this has created some auditing problems (because all customized courses there are given for credit and reimbursed in part by the state), the flexibility is considered a vital part of the College's economic development commitment.

BARRIER 29: Every college faces problems keeping up-to-date equipment for high-technology programs. With the increasing rate of new technological developments and applications, colleges have to scramble to keep track of the new developments, as well as to find funds or other resources to acquire expensive equipment that too quickly becomes obsolete.

Solutions. It may be all but impossible for two-year colleges to acquire truly state-of-the-art equipment in high-technology areas for training programs. As Clem LePack, section chief of management and education for Western Electric (Oklahoma City) points out, "It is impossible . . . for any school to keep up with what is going on in industry. In our particular case, you put your new machines into your own development groups, you don't give them around to schools . . . You supply your customers first."

Even so, colleges must strive to acquire access to high-technology equipment, even if that equipment is not the very newest, "cutting edge" equipment. For this purpose, most of the colleges studied actively seek loans or donations of equipment from industry. For many customized courses, the colleges turn to the requesting companies to supply the equipment, or try to gain access to in-plant equipment for training at times of the day when the equipment is not normally in use (or between peak usage times).

Tri-County has access to a state equipment pool through the TEC System, and the state's six Innovative Technical Resource Centers are busy acquiring up-to-date equipment in each of their specialty areas. Some of this equipment is slated to be installed in mobile demonstration and training lab units that can be moved around to the different colleges or other sites as needed.

Triton College has resolved a number of its equipment problems by bringing trade association headquarters and training facilities onto the campus. The trade associations maintain the most up-to-date equipment for their training programs and share the facilities and equipment with the College's regular programs as well.

BARRIER 30: Outside institutions that previously have provided free cooperative education opportunities for community college students are now beginning to charge for those opportunities. For example, the hospital that used to provide clinical tra[illegible]g for a number of health-related programs at Macomb is now requiring the College to pay for the training. If the College does not do so, the hospital will merely offer its facilities for clinical training to another college or private school that will pay.

Solutions. The problem, of course, stems from the fact that hospitals and similar institutions are also suffering budgetary problems and must find new sources of funding. It seems at this time that colleges will have to find monies to pay for such clinical education opportunities. Alternatively, colleges could close such training programs and allow hospitals to do their own training—whereupon the hospitals would find their training costs soaring. The mutual dependency of the institutions needs to be recognized.

H. INTERNAL ORGANIZATION AND COOPERATION

BARRIER 31: Staff resistance and institutional red tape within a college may reduce the efficiency and effectiveness of the college's economic development outreach efforts. For innovative programs, internal barriers may involve the college's regular operational procedures and rules, contracts with faculty unions, and the fragmentation of perspectives on the college's mission and priorities that can occur in large, comprehensive community colleges.

Solutions. First and foremost, administrators at all five colleges emphasize that economic development needs to be identified clearly as a major component of the college's mission. Colleges involved in economic development outreach also need a "team spirit," wherein all staff and faculty understand and feel part of the college's economic development efforts. At both Tri-County and Triton, the priorities, goals, and pace come down from the college presidents, and faculty and staff are apprised at every opportunity of those priorities and of the college's successes. At Triton, the management style is free, allowing staff and faculty to pursue economic development activities in their own individual ways. So long as the job gets done, there is freedom in how the Triton staff does it.

At SOCJC, the College conducts a two-day annual management retreat (about thirty staff from mid-management on up) to go through a process of prioritizing the ideas and concerns of all staff and students. This group then decides on the institutional goals for that year and delegates responsibility for them throughout the College structure.

At Memphis, the Business, Industry, Government Division coordinators can call for assistance from anyone in the Institute if help is needed. The Institute's priorities are well communicated to the staff and faculty, and everyone seems to have the commitment to do whatever is needed. There is heavy reliance on the use of interdepartmental memos to convey needs for assistance, and staff members expect to have to "do things a little faster or differently" now and then to get the job done.

In fact, being willing to bypass or cut through procedural red tape when necessary is a characteristic of the most active colleges in economic development outreach. For example, at Triton, computerization is used as much as possible to speed up ordering books and other tasks, but staff members do not hesitate to resort to pencil and paper, telephone calls, or whatever it takes to get the job done.

Colleges having contracts with full-time faculty members usually use direct negotiation, but this can lead to troublesome delays. At Macomb, faculty members have shown considerable flexibility, even though in some instances the College has had to override some guidelines previously established. The strength of Macomb's internal responsiveness lies in the fact that the *administration first acquired the understanding and cooperation of senior faculty representatives.*

Barrier 32: Unclear internal structure for handling economic development efforts may create confusion among faculty and staff, as well as among companies requesting customized training services from the college. That is, when responsibilities for economic development outreach are not clear to the staff and faculty of a college, important information tends to get lost or become jumbled, and critical tasks may not be completed. Internal cooperation is hampered. In addition, companies interested in requesting customized training may be unsure of whom to contact at the college, or who at the college is responsible for seeing that certain related tasks are done.

Solutions. The simplest and perhaps most efficient strategy that was encountered is for a college to create an internal organization and/or to identify a specific staff member (or members) as the primary contact and organizer for the college's economic development outreach efforts. Memphis has its Business, Industry, Government Division and coordinators, who are selected for their good human relations skills—which not only enables them to deal effectively with industry representatives, but also facilitates good working relations with other college staff and faculty.

Triton takes a somewhat more diverse approach, with the president and all top administrative staff being contacts with industry, along with the heads of the Employee Development Institute and the Job Training Institute. Tri-County has a similar arrangement, although the industry services coordinator is the main industry contact for start-up training. At these two colleges, the involvement and awareness of faculty and staff are such that industry representatives can contact any staff member initially and word will be passed along to the right people.

SOCJC appears to have melded the best elements of both the concentrated and diversified approaches. On the one hand, industry contact is decentralized, with every staff and faculty member being a part of the team. This is based on the notion that faculty members are the most knowledgeable persons to talk to industry representatives about their specialty areas. On the other hand, SOCJC does have an industry services coordinator who coordinates economic development outreach activities throughout the College, and who is responsible for following up on faculty contacts with industry, as well as for calling on industry himself.

At all of the colleges studied, the issue of interdepartmental territoriality over the delivery of customized training is a moot one. Departments and divisions seem willing to share responsibilities, and most faculty and staff members are kept informed of the colleges' priorities and expectations in that regard. In all cases, the support and influence of the college presidents are major elements in ensuring clear communications and willing coperation.

BARRIER 33: There may be poor articulation—or sometimes competition—among sister colleges for economic development outreach efforts, especially for customized training opportunities. In states with overlapping educational systems and jurisdictions, articulation may be poor, with an element of territoriality and competition for valuable resources (such as donated equipment) that sometimes come to a college through customized training arrangements.

Solutions. Although the opportunity for considerable competitiveness among the sixteen TEC System colleges in South Carolina would seem to be great, the state offices of TEC oversee

the distribution of funds and equipment among the colleges and coordinate the articulation of curricula as well. In Michigan, the absence of coordination of community college services at the state level is quite noticeable, and is probably responsible (at least in part) for the sometimes acute competition among the state's two-year colleges for customized training opportunities and other potential resources.

The State Technical Institute at Memphis does not compete directly with its sister organizations for students, funds, or customized training contracts. In fact, Memphis gives as many customized training opportunities as it can to area vocational schools in West Tennessee in order to reduce the competition for space and resources on its own campus as much as possible without compromising the quality of instruction. It also articulates many of its curricula to its sister institutions. Memphis faculty and staff are well aware that economic development outreach is the number two priority in the Institute's mission statement, and that economic development must be a statewide effort.

I. FACULTY AND STAFFING

BARRIER 34: It is frequently difficult to find qualified instructors—often on short notice—to teach customized courses. This barrier really has three main elements: (1) quite often, companies need customized training in emerging technologies where the skills and knowledge to be taught are so new that few if any college faculty are qualified to teach them; (2) companies need the training to begin almost immediately, leaving little time to locate such instructors; and (3) even for customized courses not requiring instructors on the cutting edge of a technology, full-time college faculty usually already have full teaching loads and cannot teach a customized course as well.

Solutions. Four of the five colleges studied rely primarily on part-time faculty or consultants to teach customized courses or seminars. The major reason for using them is that such instructors—who usually are also employed full-time in the specialty—have the most up-to-date skills and knowledge available in the training subject. Quite often, especially for seminars and workshops, such instructors have practical, hands-on experience with the theories, processes, and/or equipment involved. In addition, these experts are often willing to travel to off-campus sites to teach, and to teach in the evening hours or other times convenient to the company and/or trainees.

Triton College is in a particularly advantageous region for finding qualified part-time instructors in a plethora of specialties, because of its metropolitan Chicago location. The College also makes effective use of its many contacts through professional networks, its advisory committees, its other customized training customers, its relationships with trade associations, and other sources in order to locate and contract the best possible instructors for its customized training courses. Such instructors are generally contracted on a one-shot basis, though some adjunct faculty have been with the College for years.

Tri-County is also able to find part-time instructors for most of its customized courses because the College is located in a retirement resort area. Many eminently qualified retirees teach customized courses for the College. Tri-County and several other colleges may also use skilled employees or even training personnel of the company as instructors for the course. This is often necessary for highly technical training because the course content may be proprietary. SOCJC has even gone to a competitor company to find an instructor for a customized course, simply because that person was most qualified to teach the course.

At Macomb, full-time faculty members in the various specialty areas are responsible for providing and updating lists of candidate instructors for customized training in their specialties. The full-time faculty members consult the candidate instructor files and make recommendations for prospective instructors upon request. They sometimes make initial contacts with the prospective instructors. This strategy has not always been completely successful, as lists are inadequate for some specialties.

BARRIER 35: Regular, full-time faculty demand the first shot at teaching all customized courses. This may not be a problem for some colleges, but it is a serious one (especially for colleges with faculty unions) if full-time faculty are not actually qualified to teach the specific courses or if they are already overloaded with teaching responsibilities. In addition, consulting with full-time faculty regarding instruction of customized training courses may delay finding a part-time instructor elsewhere who is truly qualified.

Solutions. At Memphis the Business, Industry, Government coordinators, with assistance from the industrial relations and outreach staff, do all recruiting for customized training. The staff members of the division do try to find a qualified full-time faculty member to teach the course before looking outside the Institute.

At Macomb, the faculty contract procedure requires that when a continuing education opportunity arises (this includes customized training), a notice must be posted for at least five days to give regular faculty the first chance to bid on teaching the course. Most do not bid, however, because many of the courses are conducted off-campus or at odd times. Also, in many colleges, continuing education salary rates are lower than regular teaching rates (although in some, such as Tri-County, the rates for customized instruction can be substantially higher).

Of course, there are occasions when part-time instructors cannot be found to teach customized courses, especially when the courses are offered during normal working hours (8 a.m. to 5 p.m.). At SOCJC, many customized courses are held during the daytime working hours, when employees get released time from work. SOCJC has found that most part-time instructors can only teach evening classes, so the College relies heavily on its own full-time faculty. Where possible, those faculty members get released time from part of their normal teaching load, and if the assignment goes beyond their regular workload, they receive overload pay.

BARRIER 36: Part-time faculty have technical expertise in their specialty, but may not be skilled or experienced in instructing adult workers. It does not help for instructors to know their instructional content if they cannot convey that content effectively to their students.

Solutions. At Tri-County, the College offers a special Job Instruction course on fundamental adult instruction, just to train instructors how to teach customized training courses. Triton has a variety of approaches to helping part-time instructors become effective teachers. New part-time faculty members are assigned a full-time faculty member as a mentor. Instructional methodology and other important topics are covered in seminars open to both full-time and part-time faculty on Saturdays, with a small stipend as an incentive to attend. "Meet and eat" sessions are provided to Triton's part-time instructors, in which speakers give brief talks on instructional methodology and other topics of interest prior to evening classes. Finally, new part-time faculty at Triton are given an "instructor's survival manual" containing teaching tips and other useful information.

BARRIER 37: Colleges may have problems keeping full-time faculty upgraded in their specialties. Upgrading is especially important for instructors in high-technology areas, because of the speed with which innovations are applied in industry and become vital to the training of qualified employees. In some fields, such as computer applications and microelectronics, the evolution of new technologies and adaptations is so rapid that even the major manufacturers have problems finding qualified trainers for their personnel.

Solutions. For specialities where instructors need to be on the cutting edge of developments, perhaps the most effective solution the colleges use is to send the instructors into industry to receive hands-on experience with new applications. At Tri-County, instructors are encouraged—and rewarded—for seeking industry experience during the summer, and in some situations, the College has been able to set up cooperative arrangements with companies or even research centers at universities in order to train College instructors and upgrade their knowledge and skills. Triton College rewards its faculty for seeking industry experience by giving "points" toward raises and promotions. While Memphis also praises this strategy, so far only about two of its full-time faculty per summer have been able to take advantage of the "return to industry" experience.

Tri-County also sends its faculty along with students to take its own customized courses when those courses are taught by industry instructors. But most colleges must rely mainly on providing occasional seminars or workshops for faculty, on bringing in experts to speak on vital developments, or providing small allowances for individual or departmental staff development purposes. SOCJC recently conducted computer literacy and applications sessions for all departments in the College. Triton conducts its Saturday morning lectures for faculty, and also provides $150 in travel allowances during the school year for each full-time faculty member to attend professional development workshops or other activities.

J. OTHER ECONOMIC DEVELOPMENT OUTREACH SERVICES

BARRIER 38: Colleges must find ways to meet the training needs of entrepreneurs and small businesses that cannot afford customized training.

Solutions. Both Tri-County and the State Technical Institute at Memphis have small business institutes to serve local small business training needs. These institutes are part of a small business network that is a project of the American Association of Community and Junior Colleges and is partly funded by it. SOCJC also participates in this network.

Macomb has its own Small Business Institute—not part of the AACJC network—which helps small businesses in the Warren-Mt. Clemens area. This institute provides early morning classes ("Sunrise Seminars") for small businesses and for entrepreneurs. The College also offers business courses for entrepreneurs at a local shopping mall.

BARRIER 39: Colleges may find it difficult to deliver much-needed counseling and placement services (for training and finding jobs) to the community at large. This service is particularly vital for areas experiencing high unemployment, and community colleges are eminently suited to deliver such services. In most cases, however, the service is not one that is stipulated either in the college mission statement or in the institutional goals, nor is it supported by state funds or priorities. If it is mentioned at all, it is clustered with "community service"—usually a low priority in most state community college system mission statements.

Solutions. Some of the colleges try to meet at least some of this community economic development need through seminars and workshops. Triton College, for example, recently conducted a one-day job clinic that offered occupational and training information, resume preparation clinics and aid, placement aid, counseling, and other one-hour talks or workshops related to the problems of unemployment and job seeking—all free to the public.

As part of a U.S. Department of Education project (the Collaborative Community Career Guidance Program), the National Center for Research in Vocational Education trained Macomb Community College counselors to provide guidance counseling to the public in such locations as public libraries, in order to maximize guidance counseling outreach. The philosophy of the approach is that community colleges need to institute "storefront counseling" in order to take career guidance out to where the citizens are and where they will feel comfortable in using the service. This project is part of a long-term plan for even greater outreach, which may involve taking guidance counseling into other public and semipublic locations such as shopping centers and union locals.

CHAPTER 5

CRITICAL ELEMENTS AND RECOMMENDATIONS

Analysis of the five community and technical colleges and the industry services they provide has afforded some unique insights into the critical factors for effective participation by two-year colleges in local and state economic development and the delivery of training for industry. These recurring themes or elements for successful upgrading and retraining of workers also constitute recommendations to practitioners and policymakers who wish to become or already are involved in meeting their communities' job-related training needs. This section describes some of those critical elements and makes suggestions for how they can be incorporated into colleges' economic development outreach efforts.

1. **Strong leadership on the part of the college president is essential in mobilizing the college to serve industry and to aid in local and state economic development.** College presidents who see the need for their institutions to become thus involved should take the initiative instead of waiting for their states to mandate their involvement. Presidents must educate themselves and their key staff members to the potential roles that two-year colleges can take in economic development that are beyond the scope of regular occupational education and continuing education programs. Other critical tasks are to assess community and industry training needs and to make initial contacts with and seek the cooperation of local industries, organizations, and agencies. At the same time, presidents should make a priority of communicating the new institutional goals to their staff and faculty, and should seek new ways to inspire them to a sense of commitment and cooperation. Presidents must also reallocate the resources of their institutions to address the new priorities.

   An excellent example is the president of Macomb Community College, who took personal initiative in finding effective ways to stretch College resources and serve the dire community need for economic development. Under his leadership the College has been a catalyst in getting area organizations working together on unemployment and other related local problems. He has been particularly quick to seize opportunities to provide educational services for industry, as is shown in Macomb's involvement with the United Auto Workers and the Ford Motor Company in establishing their National Employee Development and Training Center, and with Volkswagen of America in establishing its assembly plant in Sterling Heights. The president enabled Macomb to pursue these roles by restructuring some internal College organization and by putting some key staff on special assignment.

   The president of Triton College, through creative planning, environmental scanning, and innovative programs and management, is in large part responsible for putting Triton on the forefront of high-technology training and economic development in Illinois.

2. **The visible commitment of top college administrators is a key in fostering commitment throughout the college to serving industry.** Commitment results when governing boards,

administrators, faculty, and support personnel are willing to do whatever it takes to get results. The drive for such commitment must come from the college president and top administrative staff, who must educate college staff and faculty, the board of trustees, and community leaders in the crucial economic development roles of two-year colleges. This commitment is based on the realization that the economic development activities of the college—including serving the training needs of industry directly—have the potential to improve life for everyone in the community.

At Tri-County Techical College, the president and everyone throughout the institution are geared to serving industry. They know that this ultimately serves the people by helping to provide well-paying jobs in the area. Commitment is equally evident at the State Technical Institute at Memphis, where administrators and faculty alike are aware that providing special training services to industry is an important part of their jobs.

3. **An explicit statement in the college's mission statement or the institutional goals of the president should commit the college to providing special training and educational services to industry.** By specifying such services to industry in these important documents, it becomes clear to everyone—both internal and external to the college—why the college is there and what it is to accomplish. Such a statement should also be supported by clear and visible internal structures and procedures for operating the industry services programs, for promoting and communicating the college's intentions and related needs to all relevant outside organizations and agencies, for finding resources to initiate and support the industry services, and for keeping always in view the mission of the programs and their feasibility.

At Triton College, the president has placed economic development and serving industry's needs at the top of the annual list of goal statements issued from the president's office. The list stipulates the institutional priorities and puts the rest of the College on notice without the administration's having to go through the complex process of updating the mission statement.

At South Oklahoma City Junior College, everyone in the College has the opportunity to be involved in the institutional goal-setting process. Out of this process has come the College's 1982-1983 goal to expand and give higher priority to its special educational services for industry.

The State Technical Institute at Memphis has the goal of serving the upgrading and retraining needs of industry as the second half of its official mission statement.

4. **Institutional flexibility is crucial in responding to industry's upgrading and retraining needs, as well as those of adult workers.** Industry's needs usually do not fit colleges' regular patterns of operation. Companies' requests often stipulate training at the company site. Starting times and program lengths seldom conform to the academic schedule, and companies usually want the training to start almost immediately. To customize curricula and find instructors, books, and equipment may require special action within the institutions. Flexibility must be built into institutional budgets to enable industry training activities to take place despite the unpredictability of training demands.

Colleges must also become flexible to meet the training needs of adult workers. This means being as flexible as possible in scheduling classes, sharing labs and high demand equipment, locating instruction, using instructional modes, and providing

alternatives to class attendance for adults with home and other outside responsibilities. Other nontraining assistance to help adult workers or the unemployed to attend classes and complete their training may require institutions to build basic skills remediation directly into customized or other special courses, as well as to provide tutoring, child care, financial aid, and other kinds of assistance.

The mission statement of the State Technical Institute at Memphis specifies that there shall be flexibility within the institution to provide special training services to industry. This exceptional statement highlights the priority the Institute gives to meeting industry's special training needs.

5. **Good communications—both with outside organizations and within the college itself—are pivotal to serving industry's training needs.** Colleges must communicate clearly to industry what kinds of services they offer that will help companies increase their productivity through investment in upgrading and retraining employees. To that end, colleges need a structure for marketing their services as well as effective strategies for contacting local and prospective employers. The major tasks of the marketing unit must be to communicate what services the college offers, how the services may be delivered, how dependable the college is in making good on its promises, and what benefits there are for companies that use the upgrading and retraining programs. College representatives must also listen carefully to companies' expressed needs and must seek opportunities to meet those needs. Finally, internal communication lines and clear procedures are needed within a college to enable information about opportunities to serve industry to reach the right people promptly, and to facilitate interdepartmental cooperation in developing and delivering industry training.

   Triton College has exhibited unusual expertise in communicating to companies and individuals the College's capabilities for serving their training needs. Triton's remarkable marketing strategies have attracted many clients and its creative, high quality services have established its excellent customized training reputation and inspired the spread of favorable comments about its services.

   The business and industry coordinator at South Oklahoma City Junior College emphasizes the importance of listening thoughtfully to clients, as well as gearing up College resources to tailor programs or services to meet those needs. As a result, the College has received accolades from satisfied customers for staff's ability to understand what companies want, for delivering it as promised, and for monitoring the process to ensure company and student satisfaction.

6. **The college must convince industry of its commitment to serving industry's training needs.** Colleges must make their commitment visible to companies. One way is through official mission statements and established industry services units. Another is being part of a state-level economic development system with mandated funds to support customized training. But perhaps most convincing is establishing and maintaining a track record of sound successes and no failures—"nothing succeeds like success." This means that colleges must give careful attention to the details of planning and delivering training programs. College representatives should *listen closely* to what companies are telling them, and should "speak industry's language" to gain the respect and confidence of management and workers. Finally, colleges must be ready to back their commitments, no matter what problems may arise. A college that backs out of a commitment or fails to deliver on its promises loses its training credibility. More resources may be expended

recouping a college's damaged reputation than are likely to be spent supporting an underbudgeted course or revising a program in midstream to make it deliver what was promised.

Labor organizations must also be convinced of colleges' commitment to serving them. In colleges' educational outreach, labor organizations often feel left out or ignored. College representatives need to learn how to establish relationships with and gain the confidence of labor leaders. Labor representatives should be included on appropriate advisory committees. Also, college industry service representatives or college apprenticeship coordinators need to be aware of labor's educational needs and how to tailor the college's services to them.

The State Technical Institute at Memphis makes its commitment clear through its mission statement and through the existence and activities of its industry services unit, the Business-Industry-Government Division. In South Carolina, the state Technical Education System (TEC) is active proof of the state's commitment to attracting and serving industry. Tri-County Technical College embodies this commitment with its impressive track record of industries it has served. While Triton College is not significantly involved with state economic development efforts, it has built an impressive track record and makes good use of it in its industry services marketing activities.

7. **Accurate and up-to-date profiles of local industries are vital to serving local economic development needs effectively.** Such data reveal training needs and identify factors that have potential for increasing economic growth. An up-to-date profile of area industries is evidence of the extent of the college's involvement and commitment to meeting local industry training needs. An area profile can also be a powerful public relations instrument, showing linkages with industry, success in providing customized training, and a record of the college's responses to local economic development needs.

Tri-County Technical College keeps close tabs on companies in its service area, as well as of potential new companies. Staff members with this responsibility are the president, the industry services representative, and specialists in the Continuing Education Division. Their efforts are pooled to produce accurate, up-to-date annual reports and other publications showing the number of people trained through the College, the number of new jobs the training helped to create, and the amount of money they subsequently brought to the area. The focus of the College's *1982-1982 Annual Report* was on economic development and the College's successful role in it.

Triton College in Illinois uses two main methods in keeping up to date on changes and trends in the needs of companies in its service area. Its Office of Research conducts frequent surveys to gather needed information. In addition, Triton's administrators are adept in "environmental scanning," whereby they seek pertinent information on events that affect their activities and the College's role in economic development. In this way they can be proactive in seizing opportunities and addressing both short- and long-term needs.

8. **Designating an office with specific responsibility for providing industry training services is critical to success.** This not only furnishes an identity for the college's services to industry and provides staff to do the job, but also—by allocation of these resources—demonstrates institutional commitment.

All five colleges in the study have clearly designated offices for industry services. There is considerable diversity in the structure and responsibilities of these offices, as well as variety to where in the institutional organization they are located, but their existence makes clear to everyone that customized training is available. For example, Macomb Community College has its Tailored Educational Programs and Services (TEPS), Triton College has its Employee Development Institute (EDI) and Job Training Institute (JTI), and the State Technical Institute at Memphis has its Business-Industry-Government (B.I.G.) Division.

9. **Companies must see how they will benefit from using the upgrading and retraining services provided by the college.** Profit must be the "bottom line" for industry, and colleges must demonstrate clearly that they understand and support that priority for industry.

   One of the statements repeatedly made by satisfied customers of South Oklahoma City Junior College is that the College is able to provide the training the companies want at a cost that is less than if the companies were to do the training themselves. In South Carolina, where the state provides free start-up training, companies are able to use such training to "start up in the black." Even there, however, many companies must still be convinced by industry services representatives and other TEC System college personnel that colleges such as Tri-County can really do the job for them and will teach the competencies their employees need.

10. **Being an integral part of a state system for economic development is an advantage for a two-year college.** Colleges that are part of a cohesive state economic development team usually have state funds allocated specifically for start-up or retraining programs, including funds for equipment. This kind of relationship also fosters good cooperation among the various agencies and bodies involved in economic development.

    In many states, two-year colleges are not part of the states' economic development teams. Some states do not have specific economic development agencies, or economic development efforts are in their infancy. Two-year colleges in such states should lobby for more active roles in state economic development plans, and especially for funding for (at least) customized start-up training and for an equipment pool for the state two-year college system. By becoming part of active state economic development efforts, two-year colleges can greatly extend their capacity to reach out to meet industry training needs with up-to-date instruction and equipment.

    In states such as Tennessee and South Carolina, two-year community and technical colleges are important elements in economic development and function successfully in that process. At Tri-County Technical College, faculty members can call upon state TEC System resources to help develop curricula, produce instructional materials, find needed equipment, and even pay the costs of delivering customized start-up training, as well as provide many other advantages.

11. **A staff development system that helps faculty keep up to date is crucial in delivering effective upgrading and retraining.** One of the challenges of working with industry is keeping instructors abreast of changing technologies. This is particularly essential in delivering customized training in high-technology specialties.

    All of the colleges in the study have found that working with industry is good for faculty members, especially in terms of keeping their skills and knowledge up to date

with the equipment and processes being used by local companies. The more experience faculty have with industry, the easier it is for them to relate meaningfully to the workers they train. Structured work experiences, whether during summer vacations or on sabbaticals, are proven staff development experiences. The colleges studied all are in a developmental phase of arranging such work experiences or providing incentives for faculty to pursue them.

12. **Active advisory committees are critical in providing information and contacts for quality upgrading and retraining programs.** Advisory committees can be useful at many college levels, including committees for regular program areas, for the industry services unit, and a committee to advise the college as a whole.

    All of the colleges studied have well-established advisory committee systems and a firm philosophy that expresses their importance. The colleges make extensive and frequent use of their advisory committees and depend on them for information and guidance. Advisory commitee involvement makes a significant difference in the quality and extent of the colleges' programs and services, especially when committee members are owners or executives of representative area industries.

13. **Up-to-date equipment is a key element in providing quality upgrading and retraining for industry.** Education often lags behind industry in using equipment available for training. But matching equipment used in instruction as closely as possible to equipment used in actual work is crucial, because the closer the training experiences are to actual work situations, the greater is the transfer of learning and the development of competencies needed on the job.

    All of the colleges studied had problems obtaining equipment needed to keep their high-technology programs up to date. Technology is changing so rapidly (at the same time that funds for education are declining) that the colleges are caught in a bind. Some companies have come to the rescue by donating or lending equipment. An example is at Triton College, where the National Society of Die Casting Engineers has established its headquarters on campus and has provided access to its equipment for the training not only of its own members, but also for students in the College's regular Die Casting program.

    In South Carolina, the state provides equipment from its equipment pool for the Special Schools start-up training delivered by the technical colleges, such as Tri-County. But there and at other colleges, when equipment is otherwise not available, the colleges conduct customized training at company sites and use the companies' equipment and facilities where and whenever they become available for training purposes.

14. **Close coordination is essential among college industry services representatives, customized training instructors, and company personnel when planning, conducting, and evaluating customized training courses.** Colleges should follow this philosophy in order to ensure that the courses fit the needs of the company, follow its procedures, and adhere to its philosophy of training.

    A company personnel director who has used the customized training services of South Oklahoma City Junior College stressed the importance of this kind of attention to cooperation. In a company where the plant supervisor was not involved with the college instructor in planning a customized course, the supervisor felt threatened by the course

and created problems, thereby reducing its effectiveness. The College delivered a similar course for a different company, but in this instance the company supervisor was asked to orient the course instructor, provide input into the course content, and monitor the instruction. This time, the supervisor saw how the workers' learning could be applied, and the company received the full benefit of the training.

15. **Technically competent instructors who know how to teach adults effectively are necessary for quality training in an industrial context.** The importance of the instructor in teaching adults in a work setting was stresed at all colleges studied. The State Technical Institute at Memphis has strengthened its instructional outreach to industry by hiring two full-time master teachers for the Business-Industry-Government Division. One instructor's expertise is in human relations and management, and the other's is in the technical-scientific arena.

    Often a potential instructor is technically competent but lacking in teaching skills, in which case in-service education is required to give the instructor the range of competencies needed to reach adults in the work environment. Triton College relies heavily on practitioners hired from industry to teach its customized courses, and it has found that it needs to help these people develop teaching skills. To do so, the College offers a series of seminars in adult teaching methodology, and provides a full-time faculty member to serve as mentor for each new part-time instructor. This has worked so well that all part-time faculty are now involved in the program.

16. **An institutional incentive system helps secure the involvement and cooperation of faculty in serving industry's needs.** The colleges studied have found that customized courses seldom fit usual college time frames and procedures. To encourage staff and faculty cooperation in such efforts, colleges should find meaningful ways to reward their people for the extra work and time they put in to make the courses work.

    At South Oklahoma City Junior College, instructors and departments are expected to meet annual goals for a set number of full-time equivalent students (FTEs). Participating in or offering courses for industry increases the number of FTEs generated and is counted toward the department's or instructor's goals, and is also taken into account for instructors at evaluation time. The State Technical Institute at Memphis adds the incentive of a dollar an hour more for instructors for classes taught off-campus.

17. **The scheduling of courses at times and places convenient to companies and employees is critical to successful economic development outreach.** This particular area is highly dependent on college flexibility and creativity. It often means that a course may best be taught in a place of business or during working hours or immediately after them, or even during the "swing shift." Colleges must be willing to go where students need them, when the students need them.

    Macomb Community College offers its popular "Sunrise Seminars" for retailers of a local shopping center in the mornings before the center opens. Triton has reached out to its community through its "Breakfast of Champions" courses in the early morning hours. Triton also has a "Midnight College" whose classes start after midnight. Triton's Employee Development Institute offers customized courses around the clock wherever they are needed.

18. **Including time for course development and evaluation in schedules and budgets for customized training is crucial to successful programs.** To avoid budgetary problems and misunderstandings between industry and the college, a college should stipulate time and budget monies for the development of customized courses as well as for their evaluation. A college should assign a staff person to develop the necessary course materials, and this person's time should be budgeted in the customized course funds in order to ensure that the work is accomplished and a quality educational experience is provided.

    The State Technical Institute at Memphis finances such activities by maintaining staff in the Business-Industry Government Division who have these specific responsibilities. If a faculty member from elsewhere in the Institute is utilized, that person's time is supported. South Oklahoma City Junior College has flexible contracts with faculty members that enable them to build course development time into faculty members' assigned scopes of work.

19. **"Quick response" is a key factor in meeting industry's training needs effectively.** Colleges must create or have in place a response mechanism that allows them to respond quickly and flexibly to industry training requests and to assign appropriate staff and resources to the effort. At all the colleges studied, companies requesting training often wanted and expected the colleges to deliver such training very soon after request, because the companies' productivity and market competitiveness required employees to develop new competencies quickly.

    Tri-County Technical College is always in a "go" position to respond quickly to training requests. This is facilitated (for start-up training) by the state's Special Schools concept that provides a pool of funds, equipment, and services, as well as by a full-time industry services representative located at each technical college. In addition, the total commitment of Tri-County staff and faculty to serving industry gives such requests a high institutional priority. To facilitate quick responses even more, the College is putting its instructional modules onto word processor disks. This should save much course development time, as related modules can be quickly revised, reorganized, tailored for a company, and printed out for use.

    The same pervasive sense of mission, as well as a superb organizational structure and mandated flexibility for providing industry services enables the State Technical Institute at Memphis to respond quickly to industry training requests. The establishment of the Business-Industry-Government Division as an entity equal to the other units of the Institute gives the division the authority, staff, and resources to respond quickly and with quality instruction.

20. **Sharing resources among related colleges—especially those within state systems—should enable more colleges to meet industry's training needs more effectively.** Colleges should seek ways to pool and share resources, even when the state system does not specifically support such activities. Pooled resources could include the sharing or lending of equipment, instructors, and curricula. A curriculum-sharing network may be the most immediately feasible type of resource-sharing activity, and could be greatly facilitated by putting course outlines and other materials onto word processors and/or sharing the materials via electronic networking (using computers hooked into the phone system). Colleges with newly developed courses that are on the cutting edge of a technology may even be able to "rent" such materials to other colleges in the state or across the country, thereby recouping some or all of the course development costs.

21. **Evaluations and feedback mechanisms gauging the quality and outcomes of customized instruction should be built into customized courses in order to ensure successful programs.** Formative evaluations conducted at midpoint or at several points during a course are invaluable for ensuring that a course is on-target and that students are learning the competencies desired, because such feedback permits "midcourse" corrections to be made to steer the instruction into more appropriate directions, if necessary. Summative evaluations provide valuable information on the strengths and weaknesses of the course and the instructors that can then be applied to improving future courses. Summative data are also highly important to building a credible track record in customized training offered by the college.

    Because of the changing nature of the economy, technologies, the job market, and worker expectations, colleges should review summative evaluation data periodically to get an overview of how effective and on-target their overall customized training policies and procedures are. Colleges should expect to have to refine or revise such policies and procedures periodically. Also, the policies and procedures should be expected to change as colleges mature in their customized training outreach efforts. The needs and capabilities of a college just beginning such efforts will not be the same as those of a college with a more established program.

CONCLUSIONS

The analysis of the five college case studies substantiates the claim that two-year colleges can contribute substantially to local and state economic development despite very divergent economic climates, significantly different state community and technical college systems, and different institutional missions and structures. All five of the colleges studied found creative ways to adapt and respond to upgrading and retraining needs despite such common problems as strict limits on funding and other resources, shifts in student demographics, scarcity of space and equipment, and especially the rapid pace of advancing technology. The colleges' track records prove that they have made a real difference in their communities' economic health by providing training and other industry services that contribute significantly to job creation, industry retention, technology transfer, increased worker productivity, and the betterment of work life for community adults.

The colleges are able to provide these special services for adult workers and industry because strong presidential leadership and the commitment of administration and staff create a climate of cooperation, flexibility, and service. College staff members have shown their willingness to make extra efforts and to go beyond standard operating procedures to reach out and meet—even anticipate—upgrading and retraining needs with innovative scheduling, instructional locations, course content, and modes of instruction. This commitment and flexibility are at the heart of successful upgrading and retraining programs at postsecondary institutions.

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